



Explore Nutritious Alberta

Introduction



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Introduction to Explore Nutritious Alberta

This resource binder was developed to address the instructional objectives outlined for the nutrition theme of the Elementary Health Curriculum. It features the adventures of the Club 4 children to provide an interesting forum for your classroom nutrition education.

What's included?

The binder includes a section of ten lessons for each grade from one through six. Students' worksheets and certificates can be photocopied for classroom use without infringing copyright.

Check out the **Appendix** section. It includes information for teachers so you won't have to spend so much time looking for more information.

In addition to the lessons, the following are included to supplement your nutrition education activities:

- **Canada's Food Guide to Healthy Eating** (extra copies available through regional health authorities or Alberta Agriculture, Food and Rural Development)
- **Nutrient Value of Some Common Foods** (extra copies may be purchased through Health Canada or from bookstores which carry federal government publications)
- **Club 4** photo poster showing the four Club 4 friends
- **The Nutrition Voyage** poster showing the digestive process
- **Nutrition: the Ins and Outs** (extra copies available through Alberta Agriculture, Food and Rural Development)
- **Bar Graphs** plus information about classifying food into groups. These are referred to in some of the division two lessons.
- **Summary Tables of Recommended Nutrient Intakes** (one sheet)
- **Sketches of a variety of foods** which you may photocopy in case your students don't have access to magazine pictures of foods.

Please note that unless otherwise noted, these supplementary materials are not available separately.

Where to Order Additional Binders

The complete Explore Nutritious Alberta resource package may be purchased from the Learning Resources Distributing Center. Check your current resource catalogue; address on reverse.

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About Explore Nutritious Alberta

ADVENTURES OF CLUB 4 is a unit designed to present teachers and elementary students in grades 1-6 with an easy, entertaining and informative package of nutrition information.

The information is presented through the eyes of CLUB 4, a fictional group of four elementary school who are interested in nutrition. The friends are from a variety of social/economic backgrounds and the situations portrayed are chosen to reflect the diversity of social/economic backgrounds found in Alberta.

This binder unit is divided into grades 1, 2, and 3 for Division I; and grades 4, 5, and 6 for Division II. Each grade has ten lessons. Each lesson contains a story about CLUB 4, a related lesson activity, a follow up suggestion for the teacher and a follow up suggestion for the students to take home. The story and the lesson can be done together to fill one period, or can be used on separate days. A teacher wishing to have one lesson a week for 30 weeks can use each story, lesson and the follow up suggestion as a basis for three separate lessons.

In Division II, each grade has a "theme" which is correlated to other subjects in the elementary curriculum. In grade four, the theme is **Knights of the Kitchen Table**; grade five students become **Shoppers' Apprentices** and in grade six the theme is **Passport to Nutrition**.

The stories and lesson activities relate to the nutrition topics in the Alberta Elementary Health Curriculum. The follow up suggestions cross reference to several other subjects such as Physical Education, Social Studies, Language Arts, Math and Art.

As a teacher, not a nutritionist, you may sometimes be asked difficult questions. We suggest that reading several grades before teaching your grade may clarify some points.

Also make yourself familiar with the booklet *Nutrition: The Ins and Outs* (available from Alberta Agriculture, Publications Office, 7000 - 113 Street, Edmonton T6H 5T6. Request publication number 1112-10-1).

How to Make Best Use Of Club 4

1) Tantalize your classes' curiosity. Pin up the poster a few days before starting the unit. Add a heading 'What's CLUB 4?' or 'Do you belong to CLUB 4?' Make veiled references to it in other lessons.

2) The day of the first lesson introduce the CLUB 4 members on the poster using the following information:

CLUB 4 - Four friends in a small Alberta town who form a club to explore their interest in nutrition.

CHRIS MELNYK - Helps his Mother with the new baby (Kim). Father is a truck driver. Chris likes to spend time on his uncle's farm.

MAI LIN LEE - Lives with her father and elder sister Cho San. Father is manager at the supermarket and a great cook. He has taught the two girls to speak Chinese.

LOUIS DUMONT - Father works on an oil rig and is often away from home. Mother does part-time secretarial work in the town office. Louis speaks English, a bit of French and has picked up some Cree words from his grandmother.

HANNA BOGART - Lives on an acreage with her mother, a kindergarten teacher. Hanna has a close relationship with her grandmother who spends much time at their house.

3) Students in grades 1-3 will probably not want to actually form their own club, but

will be happy to be considered 'club members' in the wide sense.

Encourage this feeling amongst your students. Any child who shows an awareness of sensible eating is a CLUB 4 member. Strengthen this by encouraging the students to do the CLUB 4 follow ups at home.

Ways To Use The Stories

(Choose the ones most suited to your grade).

- 1) Read aloud to the class.
- 2) Photocopy the story and give a copy to each student. Read the story aloud while the students follow on their copy. Students then save the stories and compile them into their own book adding their own illustrations.
- 3) Give each student a copy of the story and choose different students to take turns reading aloud.
- 4) After reading the stories to the class, pin the week's story up under the poster so it can be re-read at leisure.

Club 4 Follow Ups

An important aspect of teaching nutrition is making it relate to the home. At the end of each lesson encourage the students to be CLUB 4 members by doing a CLUB 4 task at home. The home follow up is voluntary but should be encouraged in one of the following ways:

- 1) Set the task verbally at the end of the lesson.
 - 2) Write the task on the board so students can copy it down.
 - 3) Photocopy the task on small pieces of paper that can be given to any child who asks.
- Encourage home involvement in as many ways as possible by using parent volunteers for field trips, cooking demonstrations, ethnic pot luck lunches or suppers. After the parents have helped, make them an honorary member of CLUB 4!



Explore Nutritious Alberta

Grade 1

Introducing... Club 4!

TEACHER'S NOTE: Pin up the poster of the *CLUB 4 Kids* before reading the story.

"Hey, Hanna," Chris shouted across the school grounds. "Want to hear my great idea?"

Hanna stopped skipping as Chris ran over to her. "Sure, what is it?"

Chris looked around to see if anyone was listening, then he dropped his voice and whispered. "Let's start a club, a secret club. One with just you and me and Mai Lin and Louis. What do you think?"

"I guess so, but what kind of club? What would we do?"

"We'll think of something," said Chris confidently. "I'll go and tell Louis and Mai Lin. Meet you next recess, over by the climbing bars," and he ran off to find the others.

Next recess the four friends met at the climbing bars. Mai Lin hung upside down from her knees. "This is fun, let's have a gymnastic club," she said.

Louis groaned. "Just because you're the only one that can do that," he said. "Our club should be something we can ALL do." Chris nodded. "Something we can do, something we can find out, and something fun."

"I know," shouted Louis excitedly. "Let's be a spy club and we'll catch bank robbers and things, like the kids on the TV shows.

"Aw come on that's made up," objected Mai Lin. "We need something real to do. A science club or something."

"It's hard to do science without a

teacher," said Hanna taking a chocolate bar from her pocket and breaking it into pieces. "Here, want some chocolate?"

"Yummy, thanks," mumbled Chris with his mouth full. "I love chocolate, even if it's not good for my teeth."

"Hey, how about a food club?" suggested Mai Lin. "We can take turns to bring a snack and share it at recess."

Louis patted his stomach and rolled his eyes. "Great idea, but my teacher said we shouldn't eat too many candies; can we bring carrot sticks and stuff?."

Chris got excited. "That's it, that's it," he shouted, jumping up and down. "A club about good food. We'll make snacks, and find out where food comes from, and learn something, and have fun. Right?"

The others looked at him doubtfully.

"Sounds a bit like school" said Mai Lin.

"Do we get to eat stuff?" said Louis.

"You mean learn about the four food groups?" asked Hanna.

Chris nodded. "Let's do something once a week that's about food. We'll pick a name for our club, and make badges, and do things."

Hanna laughed, "I've thought up a name. There are four of us, right?" Everyone nodded.

"And there are four food groups, right?"

Everyone nodded again.

"So, the name of our club is..."

Hanna climbed up on the bars and pretended to use her skipping rope as a microphone. "Ladies and Gentlemen, introducing... Da-da-da-da-DA... Club 4." Everyone clapped.

"That's clever, Hanna," laughed Chris. "We could make badges with the four food groups," said Louis.

"And our password is..." Mai Lin dropped her voice to a whisper "... Nutrition."

"BUUUZZZZZ", the school buzzer rang loudly over the playground. "Meet at my place tonight...", shouted Chris as the four friends ran to their class line "... and don't forget the password."

Bean Bag Toss

Objective

The students will become familiar with the four food groups.

Materials Needed

4 Food Groups Poster (to be made)

1 bean bag

1 poster board

Procedure

1) Teacher asks if the students know why the children in the story called themselves CLUB 4.

2) Have the students make a four *Food Groups Poster* from magazine pictures that have been cut out and placed in four sections on the poster board. This should be done in the shape of a rainbow to follow Canada's Food Guide. Write the name of each food group on the board.

3) Choose students to come up one at a time and identify some of the components of each food group. (Be sure to explain the alternatives in the meat and alternatives group).

4) Assemble class in a circle.

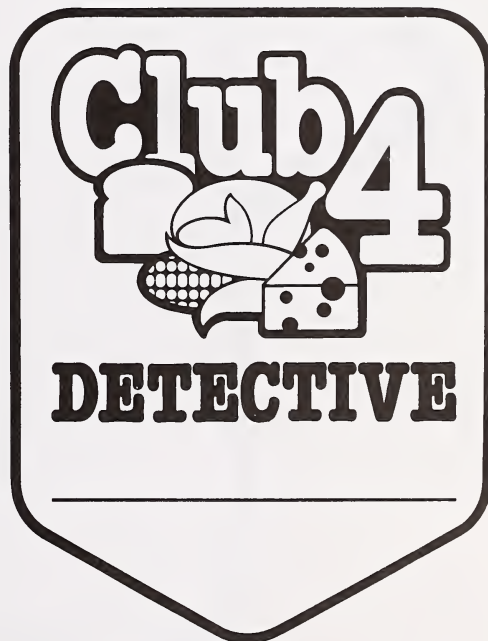
5) Toss the bean bag back and forth around the circle. As the teacher throws, call out the name of a food. As the student returns the bean bag they must call out the name of the food group it belongs to. (To keep this simple, just use the names of foods on the posters).

6) As the class gets faster, teacher occasionally calls CLUB 4, and then the student must call out the name of a food and the teacher names the food group.

7) Play this activity throughout the year using more and more foods as the student become adept at identifying them within the food groups.

Follow Up

The students design a CLUB 4 T-shirt or badge.



Club 4 Follow Up

Learn how to spell the password
NUTRITION

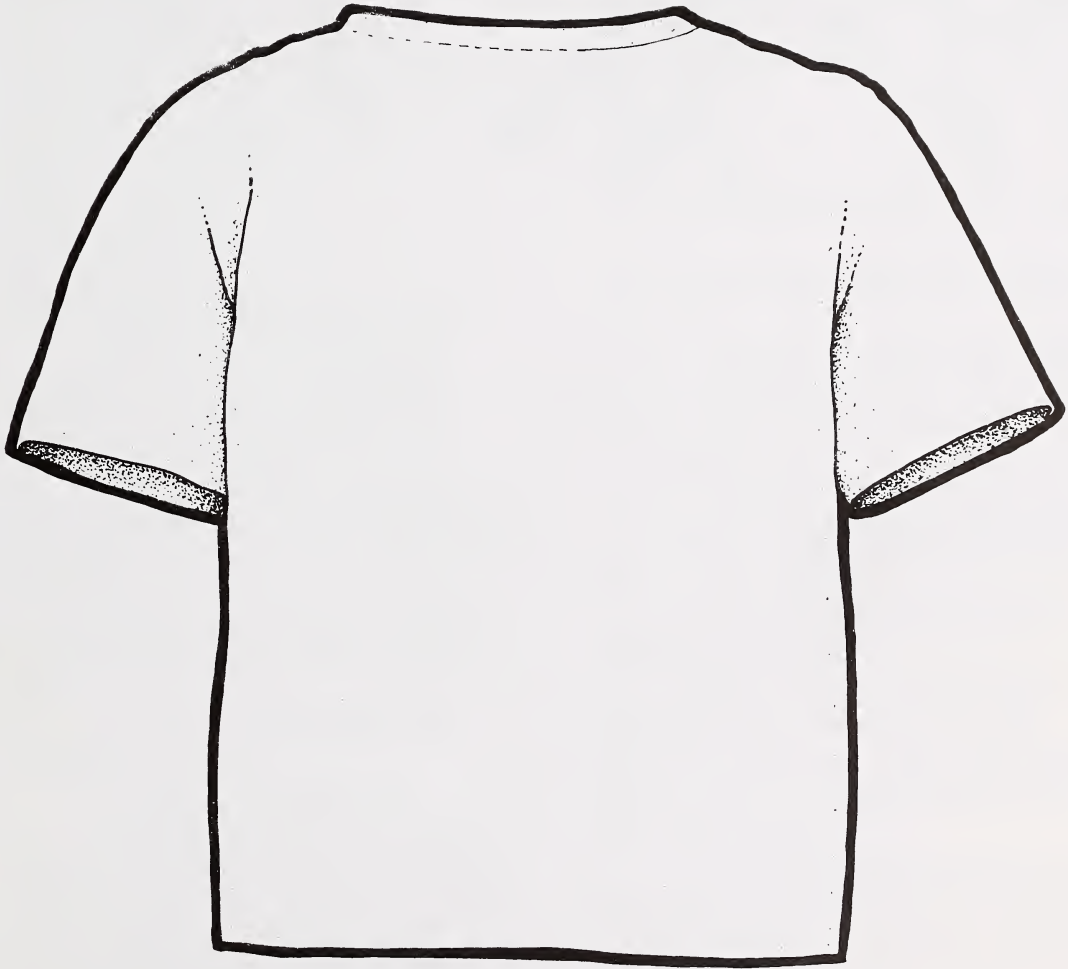
THE UNIVERSITY OF CHICAGO

PHYSICS DEPARTMENT

PHYSICS 311

LECTURE 1

Design a Club 4 T-Shirt:



What Good Is A Cow?

Brring... Brring...
Mai Lin ran and picked up the telephone.

"Hi, Mai Lin.
It's me, Chris. My dad says he'll take Club 4 out to Uncle Vladimir's farm. We'll be gone all afternoon and evening 'cause it's out near St. Paul.

Want to ask your dad if you can come?"

Mai Lin ran to her father and explained, and within ten minutes she was sitting in the back seat of the car with Chris, Louis and Hanna.

"I didn't know your uncle had a farm," said Mai Lin. "What kind of farm is it? Will we be able to ride some horses?"

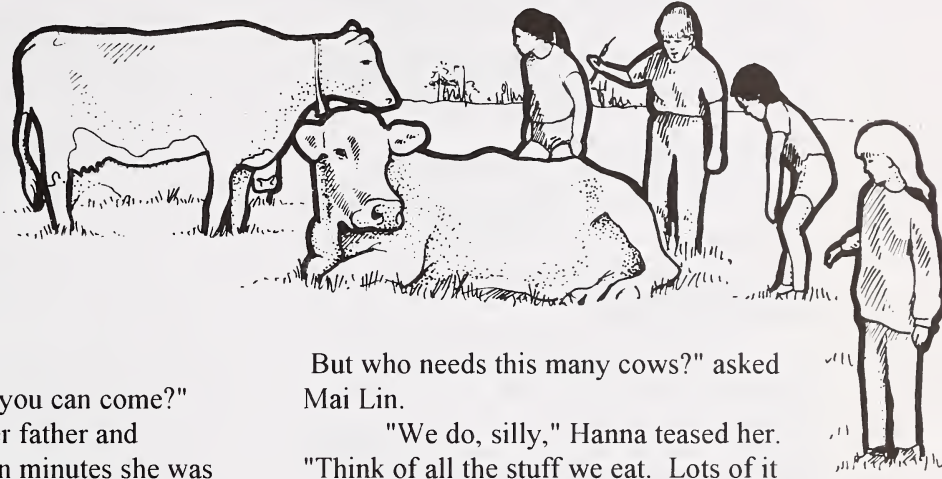
Chris shook his head. "No horses on this farm, just cows. One's my pet cow."

"A pet cow," sniffed Mai Lin.
"What good is that?"

"You'll see," laughed Chris.

The car eventually drove into the farm yard and Chris introduced the Club 4 members to his aunt and uncle. "Is it OK if I show them the cows?" he asked.
"Sure," said his aunt. "You'll just be in time for the milking." So they ran quickly to the barn.

Inside the barn Mai Lin couldn't believe her eyes. There were 40 large cows all lined up in stalls, peacefully chewing their cud. "Wow... they're big.



But who needs this many cows?" asked Mai Lin.

"We do, silly," Hanna teased her. "Think of all the stuff we eat. Lots of it comes from cows. Like milk, and butter and yogurt."

"And don't forget cheese," interrupted Louis. "That's my favourite."

"Hey," called Chris, "come over here and meet my cow."

"You really do have a pet cow?" said Mai Lin enviously.

Chris grinned. "Not really, but Uncle Vlad lets me pretend it's mine. Come and scratch her. She's called Sally, but I always call her Sal. See, she won't hurt. Will you Sal?"

The children gently scratched Sal's head and watched while the farm hands wiped her udder and attached the milking machine to her.

"Mooo," said Sal mournfully, making the children jump.

"I wish we could see what happens to the milk," said Hanna.

"We're not allowed to," replied Chris. "Germs mustn't get into the milk. The milk goes through those tubes to big tanks and then is taken to the dairy. No one touches it. But there is something else on this farm that you can touch. Come on."

Club 4 walked carefully through the barn. They crossed the yard and entered another barn.

With a great yell Chris ran and jumped. Right into a pile of hay! Hanna followed suit. "Come on you guys, a hay fight," and she stuffed a prickly handful down Chris's neck.

They played in the hay until they were exhausted. Then they heard Uncle Vlad calling them into the farm kitchen for a snack. Guess what the snack was? A cheese sandwich and a glass of milk.

Sal The Cow

Objective

- 1) Students will identify milk products by repeating their names in a clapping game.
- 2) Students will learn to spell the names of several milk products.

Materials Needed

picture of a dairy cow

Procedure

- 1) Show a picture of Chris' cow and ask the students what its name is.
- 2) Explain that many things come from milk and that milk products are important as they make us grow strong bones, teeth and nails.
- 3) Define a milk product as anything made directly from milk. Define some milk products as "Grow foods" (see Teacher's Note on the next page).
- 4) Ask the students for suggestions of things made from milk and list them on the blackboard. e.g. Skim milk, cream cheese, yogurt, butter etc. (at this point accept all milk products suggested and do not comment on the 'best' milk products)
- 5) Teach clapping game. Everyone clap once for each syllable.

MY COW SAL IS A VERY NICE COW.
SHE MAKES MILK AND MILK
MAKES

At the end of the verse point to one of the listed milk products and have the class say its name.

- 6) Repeat this game several times choosing different students to point to a

word.

- 7) Play this game on other days. As the student become familiar with this game, vary it as follows;

MY COW SAL IS A VERY NICE COW
SHE MAKES ---- (choose a milk product)
AND --- MAKES ---*

(*choose a part of the body that uses milk as a grow food - teeth, arms, legs, back, feet, etc.).

Follow Up

- 1) Students look for pictures of milk products in magazines and newspapers at home. They ask permission from their parents to cut out the pictures and bring them to school the next day.
- 2) Look at the pictures and discuss 'best choices' among milk products i.e., butter, cream cheese and cream are not good choices as they contain mainly fat. Students remove any pictures of these products (see Teacher's Note).
- 3) Make a class wallchart by sticking the BEST milk product pictures around the picture of Sal.

Club 4 Follow Up

Make sure you drink or eat two to three servings a day of milk or cheese.

TEACHER'S NOTE: Check booklet *Nutrition: The Ins and Outs*. Page 2 shows best milk product choices. Choices outside the circle are other foods. Milk is a 'grow food' as it contains nutrients, including calcium, that are important for strong bones and teeth.

Mom, My Jeans Are Too Tight

Louis' room was a mess. Clothes were piled on the bed, heaped on the floor, and hanging out of the drawers.

Louis was cross; so was Louis' mother! "If you don't tidy this room up and put some clothes on immediately, you will be late for school," she said.

"But there's nothing here to wear," argued Louis. "My superman sweat suit needs washing, an' my Oilers T-shirt has a big hole in the sleeve. I can't find my Club 4 shirt, and none of my other T-shirts and jeans fit."

Louis' mother sighed. "If you'd put your dirty clothes in the laundry basket they would get washed. Your Club 4 shirt is in the dryer and of course your jeans and T-shirts fit. They were new just a couple of months ago. Now hurry up and put some clothes on."

Louis ran and fetched his shirt from the dryer, struggled into his jeans, sat at the breakfast table and stared at the juice and peanut butter sandwich.

"Come on Louis, eat up."

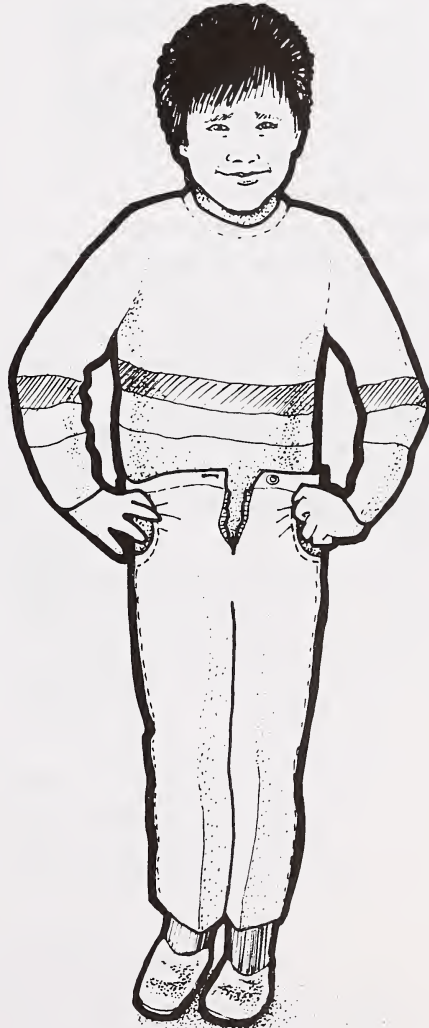
"I can't, Mom, my jeans are too tight." Louis looked up at his mother "You know what happens if kids eat breakfast with too tight jeans?"

Louis' mother shook her head.

"They throw up in math class."

His mother grinned. "Nice try, Louis. Let me see those jeans."

Louis stood up and turned around slowly. His mother grunted, ran her finger around his waistband, then tickled his



tummy. "You're right, you've grown. Guess I hadn't noticed." She ruffled his hair. "Must be the peanut butter you eat for breakfast."

"Why? Does peanut butter make you grow?"

"Sure it does," replied his mother, "what food group does it belong to?"

"Mmm," Louis thought carefully, "Meat and alternatives."

"Right, and all those foods make you grow. That's their job. You can remember it by saying "meat and alternatives make muscles."

"Meat and alternatives make muscles," said Louis as he took a big bite of his peanut butter sandwich, then flexed his muscles like a weight lifter.

With a loud POP the fastener on his jeans sprang open.

"OK, OK," laughed his mother. "Hang in there for two more days and then we'll see if we can get you a new pair on the weekend."

Louis grinned and quickly finished his breakfast. "Oh boy," he thought, "now I have something special to tell CLUB 4. Peanut butter sandwiches for breakfast get you a new pair of jeans!"

Meat and Alternatives Mobile

Objective

- 1) To familiarize students with the meat and alternatives group.
- 2) To introduce the concept of 'grow' foods.

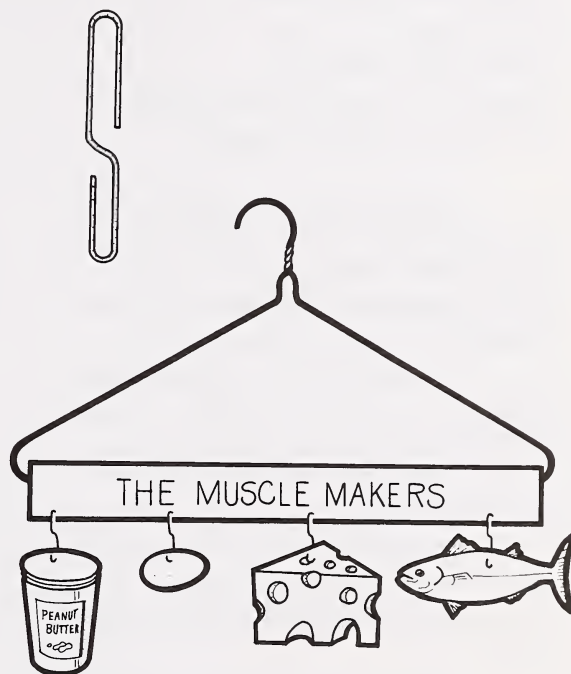
Materials Needed

- 4 Food Groups Poster (Made in lesson 1)
- wire coat hangers (1 per student)
- paper clips
- construction paper
- tape

Procedure

- 1) Review clapping song MY COW SAL with concept of milk as a 'grow food'.
- 2) Ask what different 'grow food' was mentioned in the story and what food group it came from.
- 3) Using the 4 Food Groups poster ask students to identify the foods in this group. (If students name things not on the poster check page 2 of booklet *Nutrition: The Ins and Outs* for better and best choices.)
- 4) Write the slogan THE MUSCLE MAKERS' on the board and give out construction paper and several paper clips to each student.
- 5) Students copy the slogan on a piece of construction paper and tape it on the coat hanger. (See diagram)
- 6) Students then draw and cut out their favourite foods from the meat and alternatives group.
- 7) Bend the paper clips into S hooks and hook one end in the drawings and the other end on the coat hanger.

- 8) Hang finished mobiles around the classroom.



Follow Up

Reinforce growth concept in math class. Have students outline then measure their hands and feet. Keep the result in a folder then at the end of the year repeat the exercise and compare the sizes.

Club 4 Follow Up

Make up some more slogans about the 'meat and alternatives'.

Energy to Burn

Mai Lin was skipping on the driveway.

"Blue bells, cockle shells,
Evi ivy over.
I like coffee, I like tea,
I like the boys, and the boys like me
Go pitch, go patch, go pepper"

Then she skipped pepper as fast as she could, "10, 20, 30." She got right up to 120 before she tripped on the rope. Her father stopped unloading groceries from the back of the car, and watched her.

"I didn't know you could skip as well as that, Mai Lin," he said. "I should try that, it would help me lose weight."

"How come you put weight on?" Mai Lin asked.

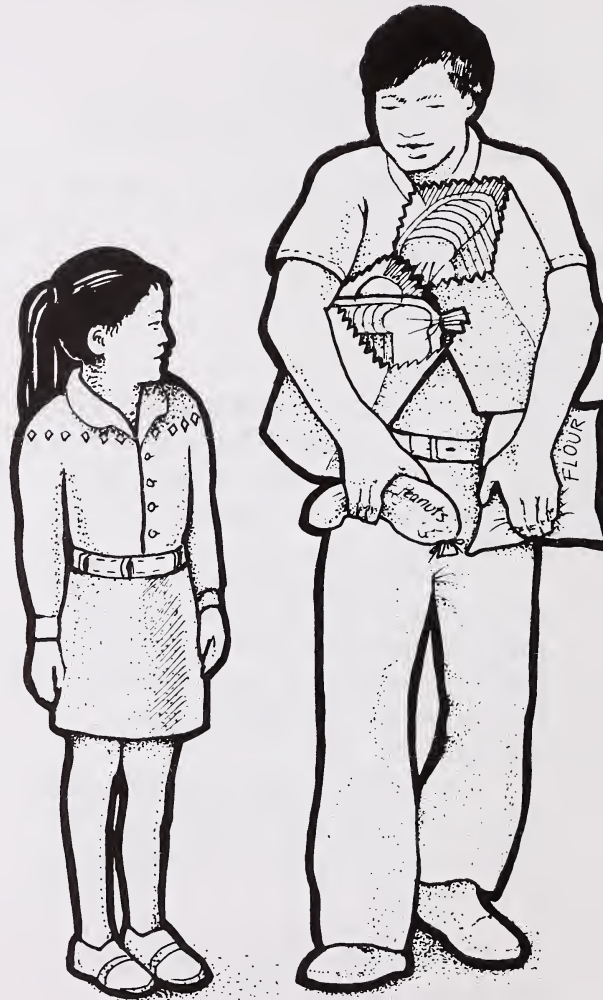
Her father laughed and patted the loaf of bread in the grocery bag. "Too many sandwiches and too little exercise, I guess!"

Mai Lin was interested. Maybe this was something CLUB 4 should know. "What do sandwiches have to do with it?" she asked.

Her father sat down on the door step, tossed Mai Lin two loaves of bread and asked, "How do you make a sandwich?"

"Everyone knows that" she giggled, catching the loaves just in time. "Two pieces of bread, and something in the middle."

Her dad looked in the grocery bag again and pulled out a package of cheese. He took one loaf and placed it on his knee, balanced the cheese on it, and then balanced the other loaf on top of that.



"Yup," he said. "Two pieces of bread with something in the middle, but the problem with sandwiches is, they are nearly all bread."

"I like bread. Besides, it's good food, it's one of the Club 4 food groups" protested Mai Lin.

"Aah, and what's the job of that food group?" Mai Lin's father looked sadly at his giant sandwich. "It gives you energy."

"But that's good," said Mai Lin.

"It's good for you," replied her father. "Kids need energy to skip and run, and play hockey, and all the other things you do. But I don't use very much energy. I sit at a desk most of the day. So my energy isn't used. It just stays in my body and turns to fat."

He picked up the top loaf and stuffed it inside his shirt to make a big fat stomach.

Mai Lin laughed, jumped up, and grabbed her Dad's hand. "Come on Dad, you'd better skip."

Her father climbed to his feet and started to jump with her. As he jumped the loaf of bread fell out of his shirt and landed on the floor.

Mai Lin's father looked at it in astonishment. "Goodness," he cried. "Skipping sure is an easy way to lose weight!"

Grain Products - Go Foods

Objectives

- 1) To understand grain products are 'go' foods that give us energy.
- 2) To identify some activities that use the energy provided by these foods.

Materials Needed

- 4 Food Groups Poster* (made in lesson 1)
- copies of Grain Products worksheet
- crayons
- glue sticks
- scissors

Procedure

- 1) Introduce the *4 Food Groups* poster. Have students identify the foods on the poster.
- 2) Talk about energy and see if students can come up with a definition of energy. (Energy makes things move..., feel warm...)
- 3) Demonstrate use of energy by asking students to stand up and run on the spot for one minute. Tell the class that this activity required them to use energy.
- 4) Hand out worksheets.
- 5) Students colour and cut out the pictures of "Energy" grain products at the bottom of the worksheet.
- 6) They then stick the energy giving foods under the pictures of actions that require energy.

Follow Up

Make and eat whole wheat pretzels. The recipe is included with this lesson.

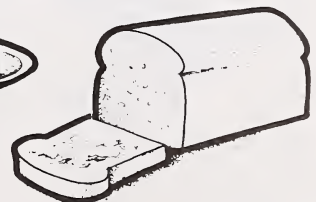
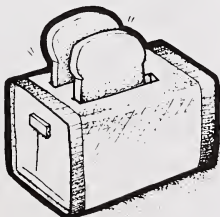
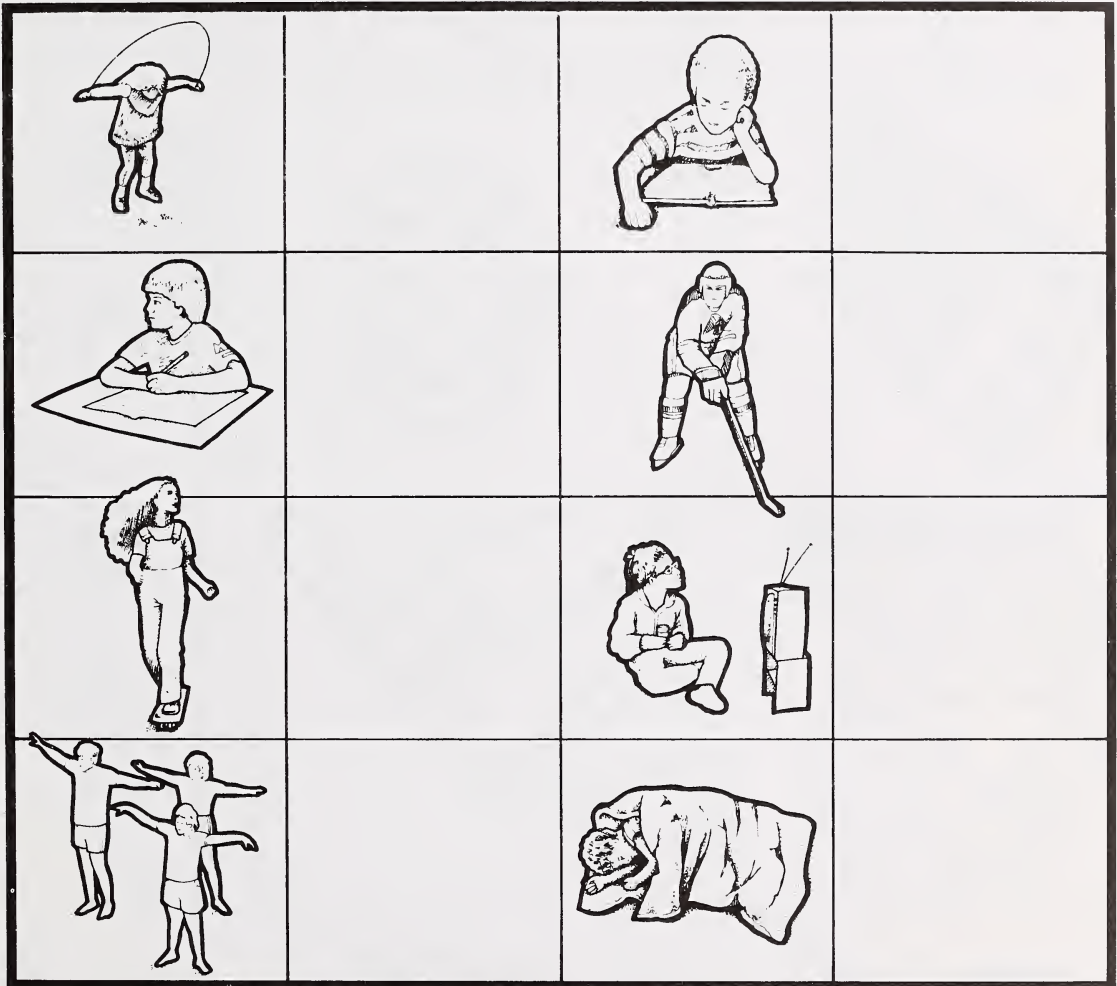
Club 4 Follow Up

Do some kind of Active Living work out such as skipping or sit ups.

Grain Products - Foods That Make You Go

Colour and cut out the GO foods at the bottom of the page.

Paste one GO food beside each picture that shows a child using a lot of energy.



Whole Wheat Pretzels

Ingredients:



1) Buy two or three loaves of frozen wholewheat bread dough. Defrost then divide each loaf into 12 pieces (1 per student).



2) Students knead and roll their piece into a rope approximately 35 cm long.



3) Shape into pretzel and tuck end pieces under.



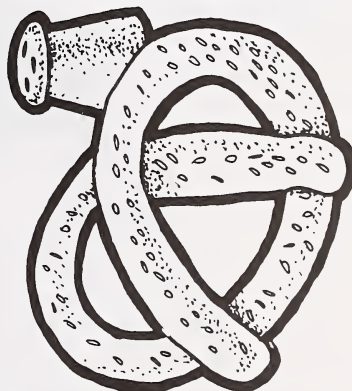
4) Place on greased cookie sheet and let rise for 30 minutes.



5) Brush pretzels with beaten egg white.



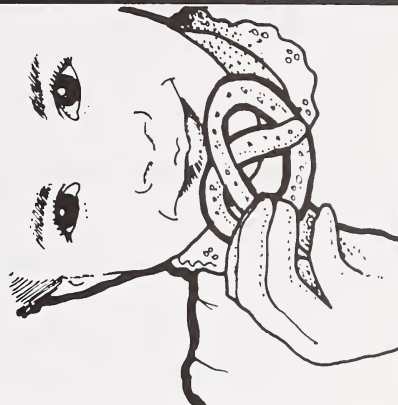
6) Sprinkle with coarse salt or sesame seeds.



7) Place a cup of hot water in the centre of each cookie sheet.



8) Bake in hot oven for 20 minutes at 350° (180°C)



The Club 4 Garden

The sky was blue, the birds were singing and CLUB 4 were lying on the lawn at Chris's house enjoying the May long weekend.

Suddenly Chris's parents appeared around the corner of the house. They were pushing a wheelbarrow loaded with a small rototiller, and a couple of spades.

"Hi Mr and Mrs Melnyk," called Mai Lin. "What are you doing?"

"It's time to plant our vegetable garden," replied Mrs Melnyk. "Want to help?"

"I get to do the rototilling," shouted Chris eagerly.

His parents laughed. "Sorry Chris, this tiller is too heavy for you. Another year, when you are older and taller, then you can try."

Chris looked really disappointed. "I never get to do the really fun jobs," he grumbled.

His mother held out a pile of seed packets.

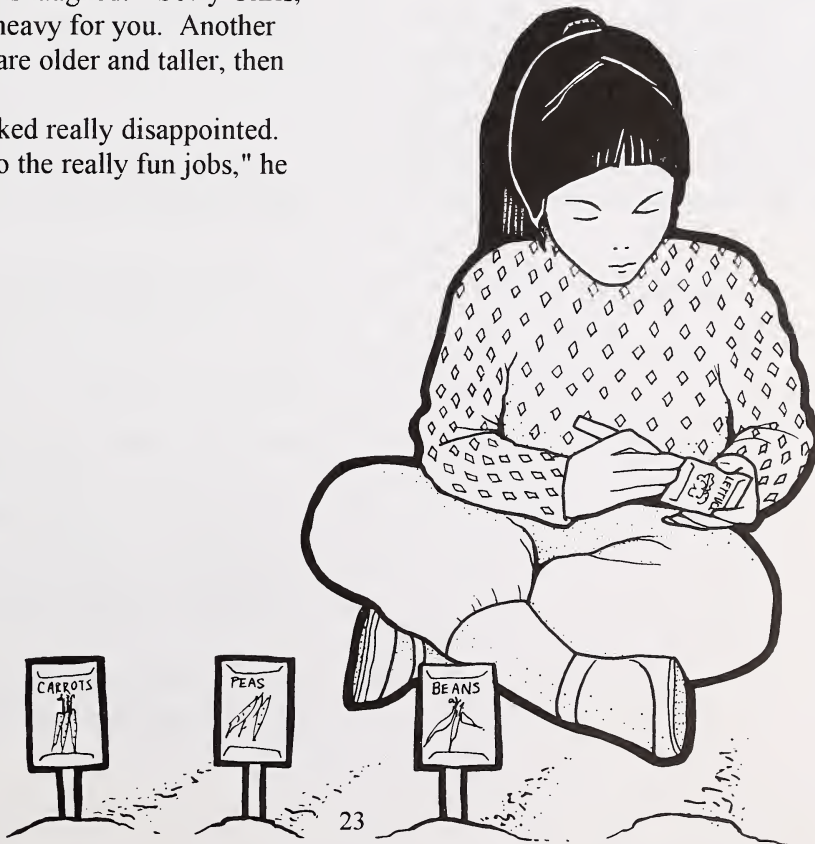
"Here, Club 4," she said, "Why don't you each choose your favourite vegetable, and you can plant the seeds after we've prepared the ground."

The four children dived on the packets and started looking at the pictures.

There were beans, peas, radishes, lettuce, parsley, carrots, Chinese cabbage, and corn.

"I thought we were going to grow potatoes," said Chris disappointedly.

"There are no potato seeds here."



Mr Melnyk bent over the wheelbarrow and pulled out a sack of potatoes. "We don't plant potatoes from seeds," he explained as he took a potato from the sack and showed it to Club 4. "But these are special potatoes called seed potatoes. See the eyes on this potato? We cut the potato into several pieces. We make sure each piece has an eye on it, then we plant it carefully in the ground with the eye facing up. Each small piece of potato then grows into a new potato plant."

"Hey, neat" said Hanna. "Why don't we cut up the potatoes for you."

Club 4 spent the afternoon carefully cutting up the potatoes and deciding where to plant the vegetable seeds. They helped prepare the ground, then sowed the seeds and finished off by watering them.

"Thanks, Club 4," said Mrs Melnyk. "You've done a good job. The vegetable seeds will be able to get all the minerals and vitamins they need from the soil. Then when they grow big and strong you will be able to eat them and get all the vitamins and minerals you need to stay healthy."

Chris was excited. "Vegetables are what our teacher calls a GLOW Food," he cried. "Milk products and meat and alternatives are GROW foods."

"And grain products give us energy, so they are GO foods," Mai Lin remembered.

Hanna pointed to the vegetable garden. "So all this stuff will help our skin, and help keep us from getting sick..."

"... and make you all GLOW with health," interrupted Mr Melnyk as he came out of the house carrying a tray of milk and carrot sticks. "Come on Club 4, time for a break."

Growing Beans

Objective

Students will understand how seeds germinate and develop by watching a bean grow and will relate this to the concept of food for their own growth requirements.

Materials Needed

large sheets of strong poster board marked off into 8 inch squares (1 square per student)

high quality plastic sandwich bags (1 per student)

2 cotton balls per student

1 bean per student

staples and stapler

water and several measuring cups

4 Food Groups Poster (made in lesson 1)

Procedure

1) Look at the *4 Food Groups Poster* and decide which group beans fall into.

2) Review the functions of the different food groups. (GO, GROW AND GLOW concept)

3) Hand out beans, sandwich bags and cotton balls.

4) Students drop cotton balls in bag then place bean on top.

5) Measure 50 mL of water and carefully pour over bean.

6) Staple each bag into a square on the poster board and write the student's name above it.

7) Pin poster board on the wall and observe the bean's daily progress.

Follow Up

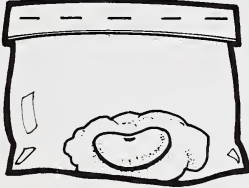

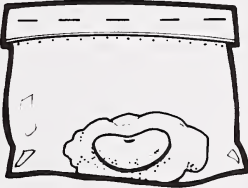

Chart growth progress in Math class by making simple bar graphs.

Club 4 Follow Up

When bean develops a good root system take it home and plant it in a pot or in the vegetable garden. Use the *Plant a Bean Seed and Watch it Grow* worksheet.

TEACHER'S NOTE: bush-type beans work best for this project

Bags of Beans! Watch Us Grow

Name:	Name:	Name:	Name:
			

Plant a Bean Seed and Chart Its Growth

DATE OF PLANTING: _____

DATE THE PLANT CAME
THROUGH THE SOIL: _____

MEASURE PLANT:
Height every three days _____

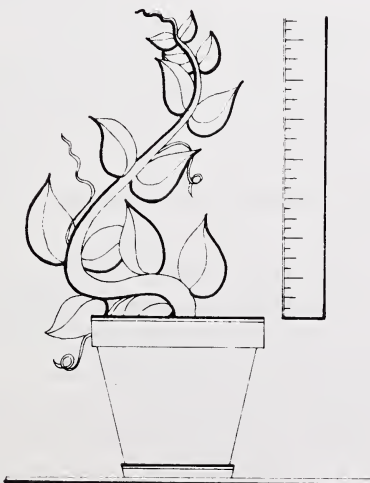
Date

Height

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

COMPARE YOUR PLANT WITH:

1. Plant without water. Describe what the plant looks like.
2. Plant without sunlight. Describe what the plant looks like.



Detectives

TEACHER'S NOTE: Have a coat, hat and cardboard cut-out of a magnifying glass ready so you can don them at the appropriate point in the story. This really grabs the student's attention!

Hanna and Louis were lying on the basement floor cutting and sticking paper.

"OK Hanna," said Louis, I've cut out four circles. Now what?"

Hanna got out her felt pens and started to make wonderful patterns on her pieces of paper. "We make different patterns, then stick the circle in the middle and write DETECTIVE on it."

"Neat," said Louis, "but who are we going to detect?"

"Not who... what," replied Hanna. "We're going to look at food labels."

"Good, I'm hungry," said Louis, rubbing his tummy.

Hanna laughed. "You're always hungry, especially if you think there's food around. You have to wait though, we're just looking, not eating. Help me finish these badges and I'll show you what my mom showed me."

Louis and Hanna worked hard and made four detective badges. Then they borrowed four safety pins from Hanna's mother and found Hanna's magnifying glass.

"What do you need that for?" asked Louis.

"Detectives always have magnifying glasses," replied Hanna. Now let's find detective coats."

Hanna and Louis rummaged in the clothes closet and found two grown up coats and put them on. (TEACHER PUTS ON COAT) Then they turned the

collars up. (TURNS UP COLLAR) Next they found a couple of hats and pulled them low over their eyes. (HAT ON)

"Wow," said Louis. "We look like real detectives."

Hanna pinned on their badges, picked up the magnifying glass, and they crept quietly towards the kitchen cupboard. (TEACHER MIMES ACTIONS)

Slowly they opened the door. Quietly they took out several packages and carefully looked at them through the magnifying glass. "Hanna," whispered Louis, "What are we supposed to be looking for?"

"We have to read the list on the side of the packet. That's the list of ingredients. Can you see the words SUGAR or SUGARS?"

Louis looked carefully at a box of breakfast cereal "I can see lots of words. Sure, here it is, see, S.U.G.A.R., sugar." He looked at Hanna. "Now what?"

"Well, we're looking for foods that have lots of sugar in them. Mom says sugar doesn't fit in the four food groups. She calls it one of the OTHER FOODS. I thought Club 4 should find out what stuff is other foods."

Louis and Hanna looked at everything in the cupboard. They found lots of food containing sugar. Jam, hot chocolate, lemonade crystals, jelly powder and Hanna's favourite breakfast cereal.

"Oh oh," said Hanna sadly, "all my favourite foods are other foods."

Just at that moment they heard a quiet step in the living room. The sound crept nearer and nearer.

Hanna and Louis looked at each other. What was it?

A strange figure wearing a coat with the collar turned up and a hat pulled low over its eyes slid around the corner into the kitchen. Louis and Hanna gasped with fright.

"Well, hello there," said the strange figure in Hanna's mother's voice. "I'm just detecting who's raiding my cupboard!"



Be A Good Food Detective

Objective

- 1) Students will understand the term OTHER FOODS.
- 2) Students will understand that sugar is an other foods.
- 3) Students will start to identify "Better and Best" among snack and drink choices.

Materials Needed

Collection of empty snack and drink containers or wrappers e.g. 2% milk, candy bars, pop can, unsweetened juice can etc. (Ask students to bring in the wrappers or containers from their favourite snack).

the *4 Food Groups Poster* (made in lesson 1)

box labelled OTHER FOODS
Detective Badge worksheet

TEACHER'S NOTE: The teacher may want to consult page two of the booklet *Nutrition: The Ins and Outs* for guidance in this exercise. Also note the reading level of your class and pre-sort the containers and wrappers so the choice lies between only nutritious snacks and other foods with the word SUGAR on the label.

Procedure

- 1) Tell the class they are all going to be CLUB 4 detectives. They are going to detect which are the best snack choices.
- 2) Write the words SUGAR and SUGARS on the board.
- 3) Show the collection of containers and wrappers. Explain that all of these are used as snacks, but some are

better than others. The reason is that some have so much sugar in them that they don't fit into the 4 main food groups. They are OTHER FOODS.

4) Explain that a good detective looks for clues and to be a food detective you have to look at the food contents listed on the wrapper.

5) Review the *4 Food Groups Poster* and place the OTHER FOODS box in the front of the class.

6) Divide the class into 4 groups. Hand out the wrappers and containers - one to each student.

7) Ask the groups to look at the products and find out which contain SUGAR. Then they must decide if the snacks fit into a food group or is an OTHER FOODS.

8) As the students identify OTHER FOODS they drop them in the box at the front. They put the other items under the appropriate food group poster section.

9) Have a class discussion on the findings.

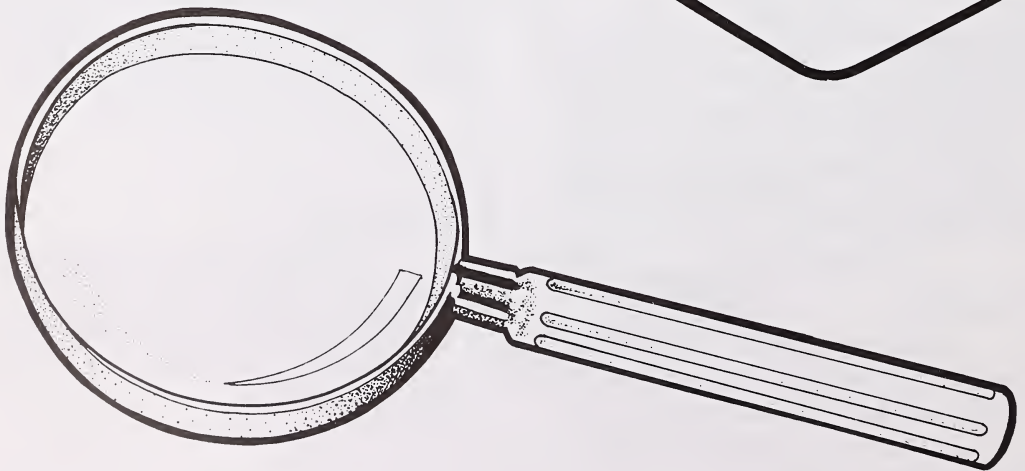
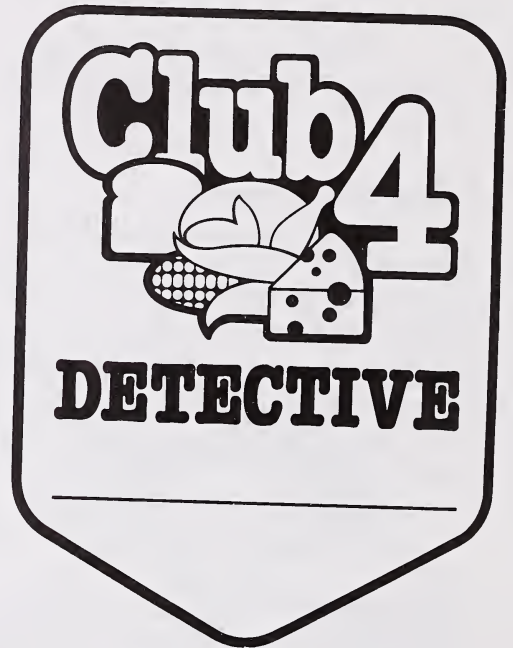
Follow Up

1) Arrange a class field trip to the local store. See how many OTHER FOODS can be identified on the shelves.

2) Give out copies of the *Detective Badge* worksheet.

Club 4 Follow Up

Make CLUB 4 detective badges from copied worksheet. Pin on the badge then go and check the cupboard and fridge at home. Detect the best snack choice and write its name on the back of the badge.



No Time For Breakfast

Louis was in terrible trouble. He was running as fast as he could down a long tunnel. No matter how fast he ran, the giant alligator behind him was catching up. Suddenly he slipped and the alligator's teeth snapped on his pajama jacket and shook him to and fro.

"Come on Louis, wake up." Louis' father was shaking his shoulder urgently "Louis, we've over slept."

Louis sat up in bed rubbing his eyes. "Er, hi Dad. I thought you were an alligator. I was running down this tunnel and..."

"Sorry Louis, there's no time for dreams, it's eight o'clock."

"Eight o'clock," yelled Louis, hopping out of bed. "My school bus will be here in 15 minutes."

You have never seen anyone move as fast as Louis did that morning. He was in and out of the bathroom like a tornado. He threw on his clothes in seconds. He stuffed all his school books into a shopping bag because he couldn't find his school bag. He pushed his feet into his

runners and didn't tie the laces. He raced into the kitchen, quickly spread some jam on a slice of bread and stuck it between his teeth. Next he grabbed his coat and hat, then, with a quick "Bye" ran out of the house and down to the bus stop.

He was just in time. As he sat down breathlessly on the seat next to Mai Lin. She grabbed the bread that was hanging from his mouth.

"Yuk, what's this?" she said.

"Give it back. That's my breakfast. We slept in this morning," Louis mumbled with his mouth full.

"Bread and jam's not a good breakfast," argued Mai Lin.

"I know, but there was no time to get anything else."

Mai Lin opened her lunch box and took out a piece of cheese and an apple.

"Here," she said, handing it to Louis.

"Dad gave me some extra stuff today, so you can have it."

Louis took it and grinned.

"Thanks, Mai Lin. Club 4 to the Rescue, Eh!"



Bang-Up Breakfast

Objective

To heighten student's awareness of a good breakfast.

Teacher's Note: To remind students of the importance of a good breakfast, repeat this activity several times throughout the year.

Materials Needed

copies of the *Bang-Up Breakfast* sheet (1 per student)
4 *Food Groups Poster* (made in lesson 1)

Procedure

1) Explain that breakfast should never be skipped as it gives your body energy to start the day. An acceptable breakfast is at least three food groups, but the 'best' breakfast is something from each food group.

2) Refresh memories by looking at the 4 *Food Groups Poster*.

3) Brainstorm with the class and record ideas for nutritious breakfasts.

4) Divide the class into partners and hand out the *Bang-Up Breakfast* sheets.

5) Model an example of a *Bang-Up Breakfast*.

6) Students discuss with their partners and record on the sheets five different nutritious breakfasts.

7) Those students who drew or wrote something in each food group have a Bang-Up Breakfast.

8) Have partners share one of their ideas with the class. Discuss the results and hand out Breakfast Winner certificates

to the students who completed the whole chart appropriately.

Follow Up

Take Polaroid photos of the children with their certificates. Pin them up on the wall with drawings of the breakfast choices. Head the display "A balanced breakfast makes us ZOOM through the day."

Club 4 Follow Up

On Saturday or Sunday, make a simple balanced breakfast for the whole family.

Examples:

Toast
Peanut Butter
Banana Slices
Milk

Yogurt
Cereal
Fruit Slices
Nuts

Muffins
Juice
Cheese

With Help:

Scrambled Eggs
Toast
Milk
Fruit Salad
Ham or Sausages

Pancakes
Bacon
Blueberries
Milk

English Muffin
Cooked Egg
Juice
Cheese Slice

Bang-Up Breakfast

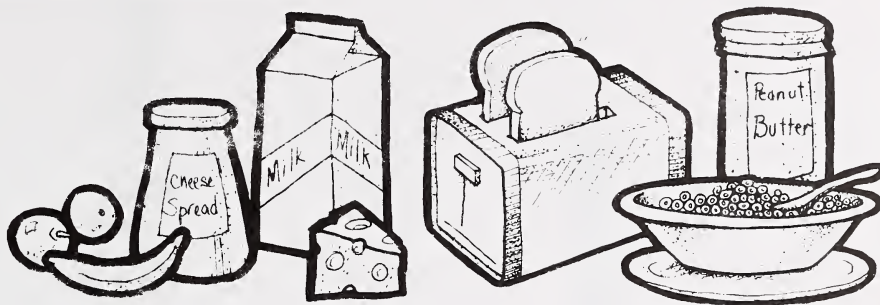
Find the four food groups.

Find the day of the week.

Using the squares underneath the day, draw or write a choice for a nutritious breakfast. Check the food groups at the side to see the order.

REMEMBER - A good breakfast contains something from 3 food groups.

The BEST breakfast contains something from all 4 food groups.



Food Groups	Monday	Tuesday	Wednesday	Thursday	Friday
Grain Products					
Meat and Alternatives					
Vegetables and Fruit					
Milk Products					



This is to certify that

is a best
breakfast winner!

DATE

TEACHER'S SIGNATURE



THE UNIVERSITY OF CHICAGO

LIBRARY



What's For Lunch?

"I'm home," called Mai Lin as she rushed in the back door. "Swimming makes me hungry. What's for lunch?"

Cho San, her elder sister, looked up from her homework. "Whatever you like, Dad's out. He said we can help ourselves from the fridge."

Mai Lin walked over to the fridge, opened the door and looked at the contents. "There's not much here, just some milk and cheese."

"I know, that's why Dad's gone shopping," said Cho San.

"Well, there's nothing here I feel like. Can I look in the cupboard?" asked Mai Lin.

Cho San shrugged, "I guess so. If you find anything good I'll have some too" and she turned back to her homework.

"Hmm," thought Mai Lin. "We need something easy, and something from each food group." She looked carefully over the shelves in the cupboard.

Question To The Class

WHAT ARE THE FOUR FOOD GROUPS?

The cupboard didn't have a lot of things in it. Just as Mai Lin was about to close the door in disgust she saw a tin of baked beans. "Great," she thought. "If I heat the beans, and toast some bread, we can have beans on toast."



Question To The Class

WHAT TWO FOOD GROUPS HAD
MAI LIN FOUND?

Mai Lin carefully opened the can of beans, scraped them into a saucepan and put them to heat on the stove. While they were cooking she popped two pieces of toast in the toaster and got out two plates. Then she went back to the fridge.

Question To The Class

WHAT WAS IN THE FRIDGE THAT
WOULD ADD ANOTHER FOOD
GROUP TO HER MEAL?

Cho San looked up as Mai Lin put the baked beans on toast and the glasses of milk on the table.

"That looks good, Mai Lin. I love beans," and they both settled down to eat.

Just as they were finishing their milk, Mr Lee rang the door bell. "Can someone help me," he called. "My arms are full and I can't get the door open."

The two girls rushed to help. As Mai Lin grabbed one of the shopping bags she noticed what was on the top. "Hurray, oranges," she cried. "Now we can finish our lunch."

Question To Class

WHAT FOOD GROUP DID MAI LIN
NOTICE IN HER DAD'S SHOPPING
BAG?

Raiding The Refrigerator

Objective

To help students make wise lunch choices.

Materials Needed

copies of *Raiding the Refrigerator* work sheet (1 per student)

copies of *Lunch Box* work sheet (1 per student)

scissors and glue for each student

Procedure

1) Share experiences of how much fun it is to raid the fridge for lunch.

2) Give out the two work sheets.

3) Discuss all the food shown in the refrigerator.

4) Students imagine they are raiding the refrigerator to pack a lunch. They can have any creative combination of foods they like, but they must try and have something from each food group.

5) Students cut out the foods they have chosen. Next they cut out the lunch box, fold and glue it, then pop the foods inside.

Follow Up

Students write a sentence about what foods they have chosen and why.

Club 4 Follow Up

Pack your real lunch for school or for a field trip. Remember the 4 food groups.

Raiding The Refrigerator

Here is a refrigerator full of good food.

Cut out the things that would give you a balanced lunch.

Cut out, fold and paste the lunch kit.

Put your food choices inside, close the lunch kit.

Show the closed lunch kit to a friend - give them clues and see if they can guess what you chose.

Club 4 Lunch Box

Cut out and assemble

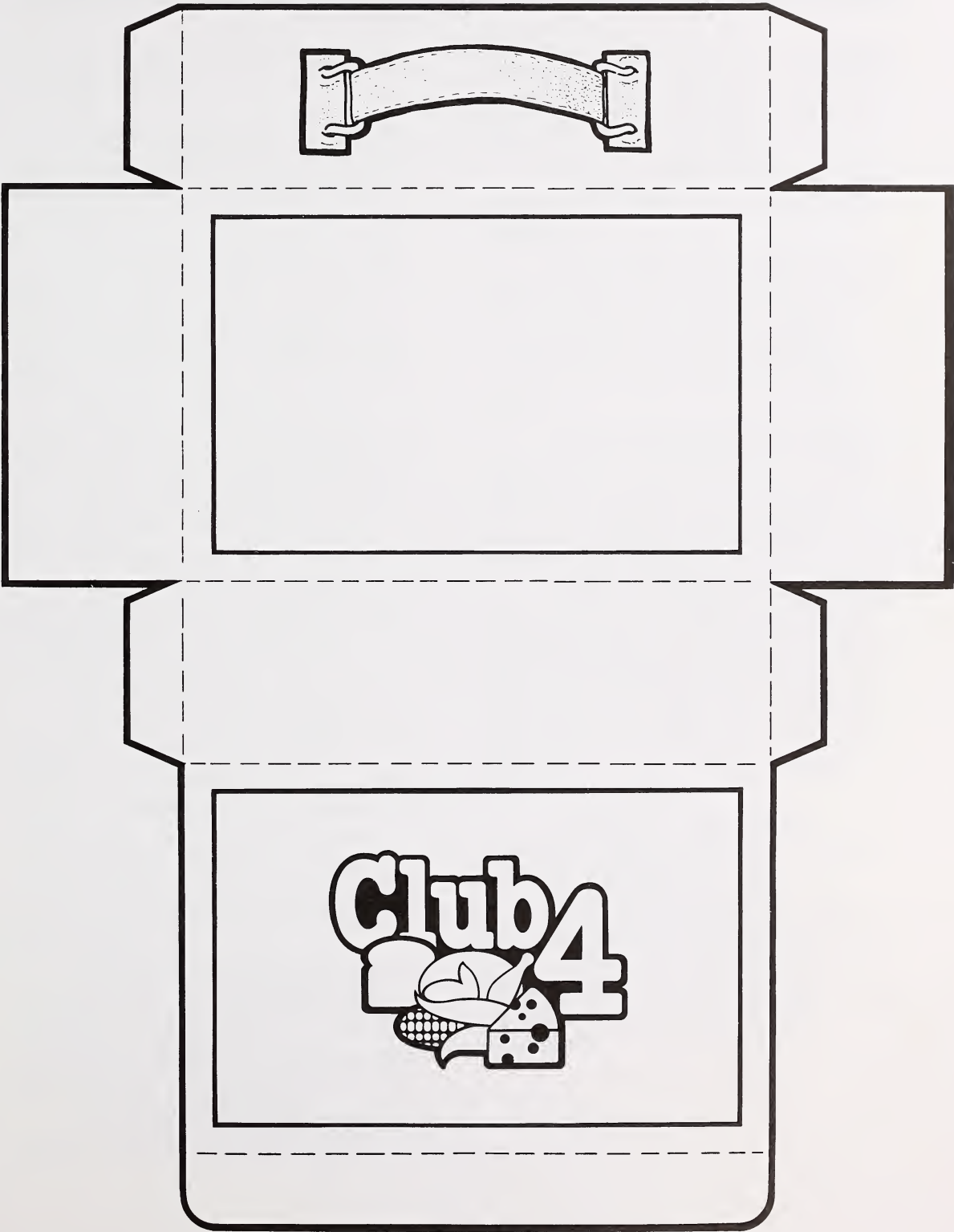
Put food choices inside

Raiding The Refrigerator





Club 4 Lunch Box



An Unusual Vegetable

(NOTE: The Greek name Karboiotis is pronounced CAR-BOY-OTT-ISS)

"Mom," said Hanna in a puzzled voice. "There's a woman in our yard. She was here yesterday morning too. What's she doing?"

Hanna's mother came over to look out of the kitchen window. "It's only Mrs Karboiotis. She's picking dandelion leaves. She asked if she could take some of ours as we don't use weedkiller on our lawn."

Hanna looked at her mother in surprise. "What does she want dandelions for? I thought only kids liked dandelions."

Hanna's mother laughed. "I know. Most adults hate them in the lawn, but some older people, like your Grandma Bogart and Mrs Karboiotis, eat them. They use the leaves as a vegetable. Lots of people from the old country use dandelions as a vegetable."

Hanna pulled a face. "YUK."

Mrs Bogart looked warningly at her daughter. "Don't YOU try eating dandelions unless they are from our yard," she said. "Dandelions are a weed in Alberta, so lots of people poison them with weedkiller. Weedkiller can poison you too. That's why Mrs Karboiotis only eats the ones from our yard. She knows they are safe."

"Later that morning Hanna passed Mrs Karboiotis. "Hi" she called." Did you enjoy the dandelions?" "I am just going to cook them for lunch," replied Mrs Karboiotis. "Come and see."

They went into the kitchen, and Hanna watched while Mrs Karboiotis

washed the dandelion leaves. She quickly cooked them in a pan with a small dab of butter and a sprinkle of pepper and salt, then she showed them to Hanna.

"That was fast," said Hanna. "But now they look really yukky, all soft and squishy."

"In Greece, where I come from, we often eat dandelion leaves. They are good if they are clean, like spinach. Here Hanna, you try," and she dropped a forkfull on a small plate and gave it to Hanna.

Hanna looked at Mrs Karboiotis smiling at her. Then she looked down at the leaves on her plate. "It's just a plant leaf," she thought "I eat lettuce and cabbage and they're plants that grow in the garden. I guess I'll try it."

Gingerly she lifted her fork and put a tiny piece in her mouth. It tasted a bit bitter, like spinach and that funny stuff her mother liked on sandwiches occasionally, yes, water cress. That was it. Dandelion leaves tasted weird, just like spinach and water cress. Still grown ups seemed to like that sort of stuff.

"Thank you. That was very interesting," Hanna said politely, so as not to hurt Mrs Karboiotis' feelings.

Mrs Karboiotis laughed "I know, you do not like them." She patted Hanna's cheek. "That is OK. My son, he doesn't like them either. But now you can say you have tried something new. A wild vegetable."

Hanna smiled back. "Yes, I can tell CLUB 4 about it."

"But remember," said Mrs Karboiotis, "wild plants are only good to eat if you know exactly what they are and where they come from. Never eat anything wild without checking it out with an adult. It may be poison. Check with

me or your mother first."

"I'll remember," promised Hanna. And she did!

QUESTION TO CLASS What other wild plants should you only eat if an adult has checked them?

ANSWER Mushrooms and berries.



Unusual Vegetables And Fruit

Objective

1) To familiarize students with the Vegetables and Fruit food group and its function for good health.

2) To introduce students to some unusual vegetables and fruit.

TEACHER'S NOTE: The vegetables and fruits mentioned here are suggestions only. The selection should be changed and adapted to reflect the ones available in your community. The selection should include Alberta grown produce as well as some exotic varieties that may be available in the local store. If this lesson is being used in a northern community you may wish to deal with 'wild vegetables and fruits' by asking a knowledgeable elder to visit the classroom with some examples.

For specific references see *Unusual Vegetables and Fruits* reference sheet, in the appendix.

Materials Needed

the 4 Food Groups Poster (made in lesson 1)

a small selection of some local vegetables and fruits

illustrations of unusual vegetables from magazines or cook books

art paper and paints

Procedure

1) Show the 4 Food Groups poster. Students name the vegetables and fruits shown.

2) Ask if any one knows why this food group is important? (GLOW foods - for vitamins and minerals that keep us healthy and make our skin GLOW).

3) Show the local vegetables and fruits. Let students name them.

4) Using the illustrations, introduce children to some unusual vegetables and fruits occasionally available in their area i.e. Bok choy, eggplant, mangoes etc. or edible wild foodstuffs if used in the area.

5) Discuss the shapes and colours of the vegetables and fruits.

6) Give out the blank paper, and art supplies.

7) Referring to the colours and shapes of the illustrations, students create pictures of "Vegetable and Fruit People" e.g. An eggplant body, onion head, strawberry nose, banana arms, pea pod fingers, celery legs, carrot toes etc.

Follow Up

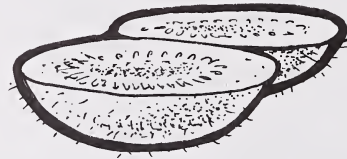
1) Each child brings a raw vegetable for sampling. These are cut up to make a class vegetable salad and everyone tastes it.

2) If you have time, let each child introduce his/her favourite vegetable and explain why they like it (discuss colour, shape, taste, texture etc.).

Club 4 Follow Up

Try tasting a fruit or vegetable you have never tried before. (Check it out with an adult first, though).

Prune

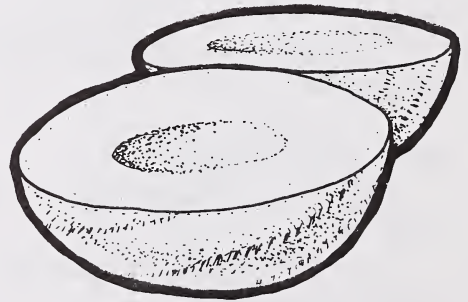


Kiwi Fruit

Papaya



Cantaloupe



Fig



Sweet Pepper



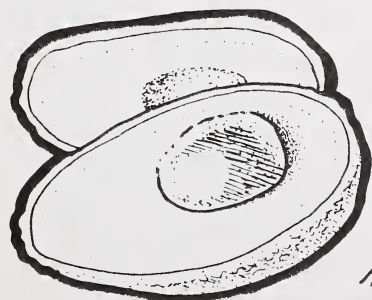
Bok Choy



Artichoke



Coconut



Avocado



Leek

A Vegetable And Fruit Person



A Visit With Some Friends

CLUB 4 were very excited. Louis' parents were taking them on a trip- a special trip to Calgary to see a show. It was even a special show. Not a film, but a show performed by two real people in tiny theatre. CLUB 4 were going to meet the actor and dancer in the show because they were friends of Louis.

"What are their names?" asked Chris. "Dana and Bob are their real names," replied Louis. "Dana is the dancer and Bob is the actor, but when they perform together they have a different name. They call themselves, SUN-ERGOS. Isn't that neat? It means "bright energy".

"Will the dancer wear ballet dresses and point shoes," asked Mai Lin eagerly.

Louis laughed. "Course not. Dana's a man, not a woman."

There was a surprised silence.

"Men dance too, you know," continued Louis. "Dana told me it's really hard work. To be a dancer you have to be an athlete and an actor both at the same time. You also have to eat the right things to give you energy but not make you fat. Dana says all the food groups are important to keep fit. He eats different things from us though, he's a vegetarian so he eats beans and fish and something called tofu instead of meat."

"Bet dancers aren't as fit as hockey players," argued Chris.

"Bet they are," said Louis. "You'll see. They said we could watch them do a warm up before the show, but we must be very quiet and not talk."

Sun-Ergos had started their warm up before the children entered the theatre. They were dressed in old sweat suits and were running slowly around the empty stage, stretching and shaking their legs and arms.

"What are they doing that for?" whispered Hanna.

"They have to get their muscles warm and the circulation going so that their muscles will stretch when they start the dance movements," whispered back Louis.

Club 4 watched in amazement as Dana and Bob bent and stretched, did push ups and back bends and then, after half an hour of hard exercising they started lifting each other into the air. Then Dana practised his leaps and jumps. The sweat was pouring down their bodies.

Chris was impressed. "Wow, they're really strong," he said. After another 15 minutes hard exercising, Dana and Bob grabbed towels to wipe themselves down and ran off to get changed into their costumes. The curtain went down and faint bangs were heard as the stage crew set up the scenery.

Club 4 sat quietly in the theatre and watched the rest of the audience come in. Eventually the audience lights dimmed, the stage lights brightened, the music started and the curtain rose. Then the magic happened. Instead of two sweaty men working out, Club 4 saw mystical figures of Indians and animals as Sun Ergos acted and danced the lovely story of "The Bear Who Stole the Chinook."

Fitness And Lifestyle

Objective

To make students aware that fitness and good nutrition is important in all walks of life.

Materials Needed

10 poster profiles supplied

Dana Luebke - Sun Ergos male dancer and actor

Susan Swan - Police officer, who jogs with her dog 3 miles a day

Wilfred Dorsey - retired, now an acreage gardener and square dancer

Marilyn Weisz - University science student and swimmer

Parkash Sarkar - Working mother who attends aerobic classes

Lawrence Martin - Postal worker who walks on his route in all weather

Ted Vince - Wheelchair athlete and graphic artist

Lynette and Lothar Dobros - Working ranchers

Michel MacDonald - Metis trapper

Jason Bristol - Elementary School student

Procedure

1) Teacher (or a student) chooses an interesting profile.

2) The teacher holds it so the students can see the picture while the teacher can read the information on the back.

3) The teacher then uses the

information to 'role play' the character on the front. (a change of voice and body posture to indicate sex and age make this a fun approach).

4) Students ask questions about the person; name, age, occupation, favourite food, least favourite food, favourite activity and the job they like doing least. (Write topics on the board first if the class needs help).

5) Teacher answers the questions using the information on the back of the profile.

6) After several minutes have a class discussion to see if the subject had a lifestyle and food habits that were good or should be improved. Class makes suggestion of any improvements.

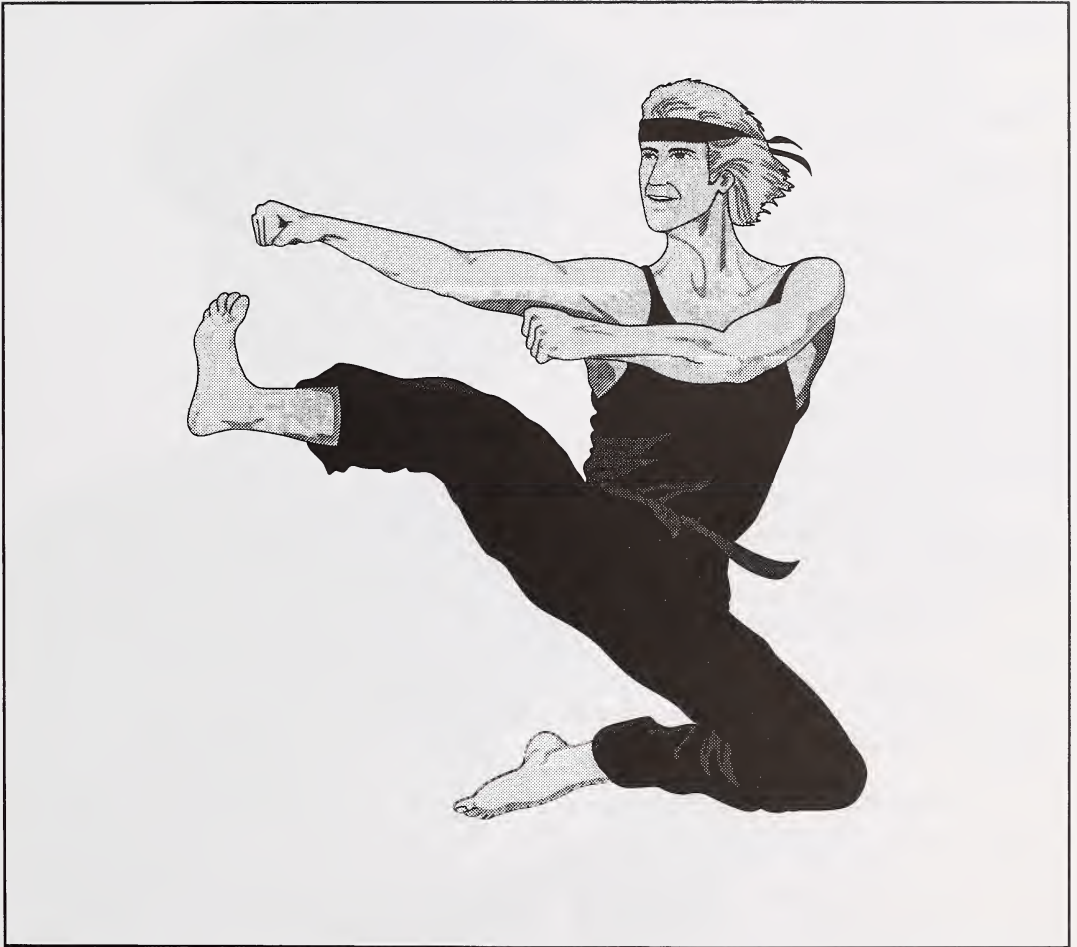
7) The role playing can be done several times with different profiles during the same class, or done on several different days.

Follow Up

A fitness class

Club 4 Follow Up

Using the same questions, interview a relative to see how he/she keeps fit, and what they eat.



Dana Luebke

Age: Early thirties

Occupation: Dancer with SUN ERGOS, a Calgary theatre company.

Family: Single

Favourite Foods: Grain products (GO) - Russian black bread.

Vegetables and fruit (GLOW) - Raspberries.

Meat and alternatives (GROW) - I am a vegetarian. I love eggs and lentils.

Milk products (GROW) - Cottage cheese.

Favourite Activity: Designing and painting stage sets while listening to classical music. This is a nice quiet activity that helps relax me after an exhausting performance.

Pet Peeve: People who smoke cigarettes. It is not only dangerous for them but the smoke harms anyone who breathes it in.

Favourite Quick Breakfast: A blender drink made from eggs, fruit milk, honey, almonds, and wheat germ. It is quick and easy and provides nutrients and energy before my morning workouts.

Favourite Drink: Fresh squeezed orange juice.

Favourite Snack: Tofu ice cream. An ice cream made with soya beans. It is high in protein for body growth and provides energy for all the dancing.

Input-Output: Dancing is hard physical work so every day I burn up lots of energy and so do not have to watch my diet. I have a problem though when I go to visit people who serve meat at every meal. I usually carry some nuts with me so I can sprinkle them on top of the vegetables and salad and have a balanced diet without causing a problem to my host or hostess.



Susan Swan

Age: 28

Occupation: Served three years as a police officer in Pincher Creek.

Family: Lives alone with her dog Rusty.

Favourite Foods: Grain products (GO) - Spaghetti or noodles.

Vegetables and fruit (GLOW) - the Caesar salad served at the local diner.

Meat and alternatives (GROW) - . roast chicken.

Milk products (GROW) - 2 Glass of cold chocolate milk.

Favourite Activity: Jogging with my dog, Rusty. We jog at least three miles daily. It relieves tension from my job and gives Rusty a good workout

Pet Peeve: Having to bath Rusty after a muddy run.

Favourite Quick Breakfast: Peanut butter on wholewheat bread, half a grapefruit and a glass of milk.

Favourite Drink: An occasional home-made milk shake made with fresh fruit.

Favourite Snack: An apple, it's easy to carry and eat in the patrol car.

Input-Output: My biggest problem is that I spend a lot of time driving around in the patrol car. Often the only place to eat is the drive-in or fast-food places that serve a lot of fried foods. So I don't eat too many calories, I never order french fries but ask for coleslaw instead. I run every day and also take judo lessons once a week. Judo is good for self defence and it's very good exercise.



Wilfred Dorsey

Age: 63

Occupation: Retired market gardener in the Red Deer area.

Family: Wife (60) three married children and 12 grandchildren.

Favourite Foods: Grain products (GO) - home made wholewheat bread fresh from the oven.

Vegetables and fruit (GLOW) - broccoli from the garden.

Meat and alternates (GROW) - steak.

Milk products (GROW) - cheese.

Favourite Activity: Square dancing once a week at the local community hall. I am proud of the ribbons my wife and I have won. Square dancing is great exercise in the winter because it's indoors so we don't worry about slipping on ice. We have cut down on winter sports now we are older.

Pet Peeve: I hate rototilling as the machine is a bit too heavy for my arms. Every spring I hire a teenager to do it for me.

Favourite Quick Breakfast: Home made vegetable juice. I make it in the juicer with carrots, tomatoes, zucchini and celery from the garden. I call it "Dorsey's Dynamite Drink". A glass of that with some cheese and crackers sets you up for the day. (3 food groups)

Favourite Drink: Dorsey's Dynamite Drink, what else!

Favourite Snack: Carrot cake.

Input-Output: I eat smaller portions nowadays because I don't work as hard as I did before I retired. I try to stay away from other foods (other than occasional carrot cake) because they make you fat if you don't work them off. My wife and I are very active and healthy. We garden in the summer, square dance in the winter, and enjoy taking long walks with the grandchildren. We also often go into town to swim at the recreation centre.



Marilyn Weisz

Age: 22

Occupation: Third year university science student.

Family: Single.

Favourite Foods: Grain products (GO) - Cornbran breakfast cereal.

Vegetable and fruit (GLOW) - Strawberries.

Meat and alternatives (GROW) - Fish.

Milk products (GROW) - Yogurt and chocolate milk.

Favourite Activity: Swimming and skiing.

Pet Peeve: Having to sit for a long time, especially in desks.

Favourite Quick Breakfast: Peanut butter on wholewheat and a glass of milk.

Favourite Drink: Home-made strawberry milkshake made from frozen strawberries, milk and ice cream.

Favourite Snack: Popcorn.

Input-Output: I swim 60 or 70 lengths of the swimming pool five times a week. I do this after I have finished classes and it takes me about 45 minutes. After swimming the lengths I like to play in the water, trying to stand on my head underwater and silly stuff like that. It helps me unwind. I try and eat foods that give me energy but I don't eat sugars. Sugar gives my body a quick spurt of energy that's used up quickly. I need to eat the carbohydrates found in pasta and breads as these slowly release energy to the muscles over a long period of time. All swimmers do this to help their endurance. I eat three balanced meals a day. I try not to eat things high in fat and I make careful choices when I need a snack.



Parkash Sarkar

Age: 32

Occupation: Secretary with construction company in Peace River district.

Family: Two school age sons.

Favourite Foods: Grain products (GO) - chapatis, a flat bread from India like pita.

Vegetables and fruit (GLOW) - oranges.

Meat and alternatives (GROW) - curried chicken with cashew nuts.

Milk products (GROW) - Plain yogurt.

Favourite Activity: Aerobic dance routines. I dance three times a week, during the office lunch hour, with several other members of staff. We start with warm up exercises, then gradually move into the routines, then we finish with relaxation and cooling exercises. Aerobics are wonderful exercise for your heart and lungs as well as your figure.

Pet Peeve: I dislike ordinary exercise as I find it boring. I like to dance wildly to rock music.

Favourite Quick Breakfast: Plain yogurt with fresh fruit and nuts stirred into it (three food groups).

Favourite Drink: Rose hip tea has no calories and provides some vitamin C.

Favourite Snack: Samosas, the East Indian version of a small eggroll. It's made with chick pea pastry wrapped around an assortment of curried vegetables, meat and rice. It's tasty and filling but because it is deep fried I don't eat it very often.

Input-Output: Exercise is very important to me as my job is mainly sitting and typing. Several office members were in the same situation, so we organized the noon aerobics class. The class started out with only six women, but now there are 14 class members including some men. My sons and I eat our main meal of the day in the evening, so I have light lunches, usually a salad. At the weekend my sons like to go out to a lake to fish and swim and sometimes I go with them. I also like cross country skiing.



Lawrence Martin

Age: 23

Occupation: Postal worker in
Lloydminster.

Family: Wife, Jocelyn, and a 4 month old
baby, Jean.

Favourite Foods: Grain products (GO) -
Buckwheat pancakes.

Vegetables and fruit (GLOW) - Carrot and
celery sticks. I carry these in my mailbag and
munch them on my round.

Meats and alternatives (GROW) - A
French chicken stew called Coq au Vin. I make it
for special occasions like the day we brought Jean
home from the hospital.

Milk products (GROW) - Camembert
cheese.

Favourite Activity: Curling.

Pet Peeve: People who don't know their
postal code.

Favourite Quick Breakfast: I don't eat a
quick breakfast because I need the food energy to
get me through my walking route. I don't have
lunch until I've finished delivering and sometimes
that's mid-afternoon. My favourite breakfast is
buckwheat pancakes, with ham and maple syrup
and some fresh fruit. I know syrup is an other food,
which is why I snack on vegetables.

Favourite Drink: Cranberry juice.

Favourite Snack: Peanuts.

Input-Output: Walking on my mail route
keeps me fit. I even enjoy it when it's 40 below as
long as there isn't a wind. We don't go out much
now we have the baby, but I curl once a week and
Jocelyn goes to an aerobics class every Monday.



Ted Vince

Age: 26

Occupation: Wheelchair athlete and graphic artist.

Family: Single.

Favourite Foods: Grain products (GO) - Pasta of all kinds. I have to carbo-load (eat a lot of carbohydrates) before a game or track events to give me a spurt of energy.

Vegetables and fruit (GLOW) - Bananas. It's a good job I like them as I have to eat lots. Bananas contain potassium which my body needs as I lose potassium when I sweat during a game.

Meats and alternatives (GROW) - Chicken is my favourite.

Milk products (GROW) - I don't really like milk so I eat cheese.

Favourite Activity: Playing basketball to raise money for Northern Lights Wheelchair Basketball League which funds a summer camp for the kids who are amputees.

Pet Peeve: Washing windows.

Favourite Quick Breakfast: Bananas, muffins and milk.

Favourite Drink: Fruit juice.

Favourite Snack: I try to stay away from snacks. When I do eat one I usually choose fruit.

Input-Output: Because I am an athlete I have to take good care of my body. I've learned what foods supply the energy and vitamins and minerals my body uses during the stress and pressure of races or games. I eat lots of carbohydrates in the form of pasta, but I don't get fat as the carbohydrates burn off during an athletic event. I exercise to build up the muscles in my upper body especially the triceps muscles in my arms. I have an exercise machine and a special stationary roller that is wide enough for my wheelchair to snap into it. This allows me to prepare for track events if the weather stops me from practising outside.



Lynette and Lothar Dobros

Age: Middle 40's

Occupation: Ranchers in the Cochrane area.

Family: Two teenagers attending Olds Agricultural College.

Favourite Foods: Grain products (GO) - Hot porridge on a cold winter morning.

Vegetables and fruit (GLOW) - Pumpkin; our pumpkins win prizes at the local fair. Lynette serves pumpkin many ways. She bakes it as a vegetable, makes it into pies, cans it and makes pumpkin muffins and relish.

Meat and alternatives (GROW) - Alberta prime rib steak or roast. Preferably from our own cattle!

Milk products (GROW) - Farmer's cheese.

Favourite Activity: Trail riding in the nearby mountains.

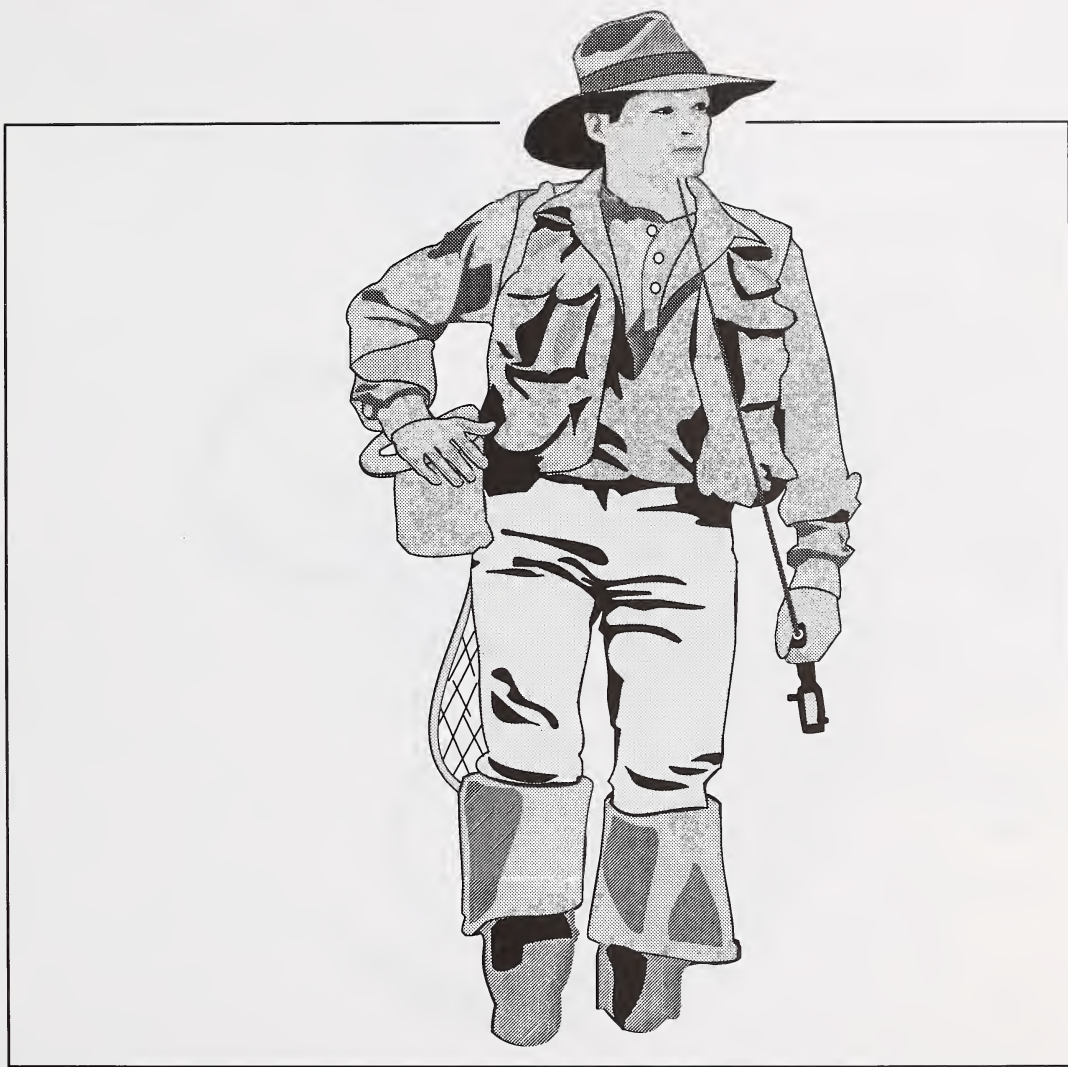
Pet Peeve: Discourteous city drivers who change lanes without signalling and drive over the speed limit.

Favourite Quick Breakfast: We don't eat 'quick breakfasts' but always have a big farm breakfast to start the day. We often have porridge and milk, sausages and grapefruit. We usually drink coffee. (Four food groups and an other foods).

Favourite Drink: Hot chocolate on a cold winter day.

Favourite Snack: Pumpkin and cranberry muffins.

Input-Output: This has only been a problem recently. When we were younger we did most of the ranch work ourselves and so burnt off all our food intake with hard work. Now we can afford to hire help to do many of the heavy jobs. Because we don't work as hard we try not to overeat. We eat smaller portions of meat and fill up with vegetables if we are hungry. We have also cut down on the amount of baked goods and now only eat muffins once or twice a week instead of every day. Despite this we are still gaining a bit of weight so we have enrolled in racquet ball classes and play twice a week.



Michel MacDonald

Age: 43

Occupation: Trapper/fisher in Fort Chipewyan area.

Family: Wife and four children, 18, 15, 11 and 9.

Favourite Foods: Grain products (GO) - Bannock; I often make it when I'm out on the trap line.

Vegetables and fruit (GLOW) - Wild mushrooms and blueberries. It is not always easy to buy fresh vegetables in the north, so families go out berry picking or mushroom picking in the summer.

Meat and alternatives (GROW) - Fresh whitefish caught from the lake and cooked immediately; it's delicious.

Milk products (GROW) - We live in the bush, and so we use a lot of powdered milk as it keeps for a long time. A glass of fresh milk is a real treat.

Favourite Activity: Racing my dog team.

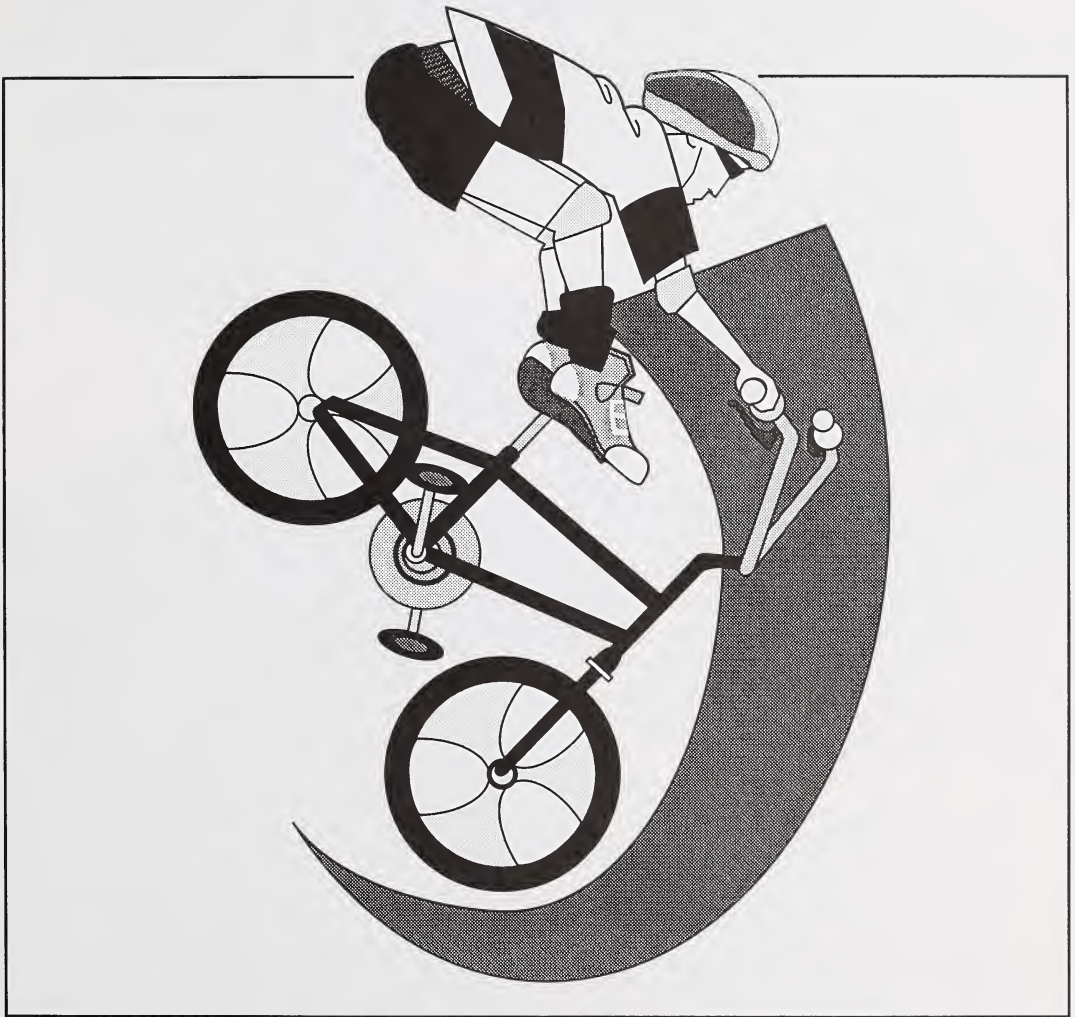
Pet Peeve: The winter storms that make the TV go out when I'm watching my favourite program.

Favourite Quick Breakfast: A piece of pemmican made with dried meat and wild berries, bread and tea. (three food groups and an other foods)

Favourite Drink: Fresh spring water on a hot summer's day.

Favourite Snack: Sunflower seeds.

Input-Output: Trapping and fishing is active work. I sure don't need to attend exercise classes. There is also a lot of work to be done around the house. We have electricity but use a wood burning stove for heat. This means there is always some wood to be cut. I relax by watching TV, but sometimes we'll get together with friends and get out the fiddle and a few guitars and play at the community hall for a dance. We don't eat fancy food. We eat the meat and fish I catch, bake bread or bannock, and we can or freeze fruit and vegetables in the summer. This sees us through the winter.



Jason Bristol

Age: 7

Occupation: Attending grade two.

Family: Five year-old sister, mom and dad.

Favourite Foods: Grain products (GO) - Macaroni dinner.

Vegetables and fruit (GLOW) - Watermelon.

Meat and alternatives (GROW) - Peanut butter.

Milk products (GROW) - Strawberry milk.

Favourite Activity: BMX biking on the dirt piles.

Pet Peeve: Taking out the garbage.

Favourite Quick Breakfast: Cold pizza left over from the babysitter the night before.

Favourite Drink: Apple juice with ice in it.

Favourite Snack: Home-made popsicles made from fruit juice. Mom lets us make them every summer.

Input-Output: What? Never heard of it. I just eat what my mom gives me and play with my friends and stuff. I know I shouldn't eat much sugar even though it tastes good. My mom lets me eat vegetables from the fridge and I drink lots of milk. I like to spend my allowance at the store but it's hard to buy good stuff with 50 cents. Last week I got sugarless gum. I'm going to save my money this week though, I've seen these real neat reflectors for my bike wheels and if I save up for four weeks I'll be able to buy them.





Explore Nutritious Alberta

Grade 2

Land Of The Four Food Groups

TEACHER'S NOTE: Pin up the *CLUB 4 Kids* poster and introduce the four children and the idea of CLUB 4 before reading the story - see Introduction for Grade I.

Mai Lin, Chris, Louis and Hanna were tired. They had spent all morning BMX racing in a nearby field. Now the sun was hot, so the four friends spread an old blanket beneath a tree and one by one drifted off to sleep.

It was Hanna who first realized something strange was happening. She opened her eyes, sat up and found the blanket was in mid air. Not only that, the blanket was hovering over a country she had never seen before. Below her was a

green field of alfalfa sprouts, the clouds above her looked suspiciously like mashed potatoes, and the lake seemed to be orange juice surrounded by spaghetti trees.

Hanna was so startled that she let out a shriek like a steam whistle.

Mai Lin, Chris and Louis woke up quickly.

"Who's hurt?" said Louis, startled.

"No-one, yet," whispered Hanna ominously. "But don't move too quickly!"

The friends clung wide-eyed to the edge of the blanket as it floated down to earth.

"Where are we?" gasped Mai Lin as the blanket landed.



"You're in the Land of the Four Food Groups," said a squeaky voice behind them.

The four friends turned around and there, bowing and smiling, stood a strange being. A tall, thin, pale green person topped with dark green curling hair.

"Welcome," it squeaked. "I'm Crunch. So glad you came to help us."

"Er... help you?" questioned Chris.

"Yes," replied Crunch. "Aren't you the kids who are interested in nutrition, the ones called CLUB 4?"

The friends looked at each other and nodded.

"Well, we brought you here to help us. You see there are four main villages in the Land of the Four Food Groups.

There's the village of Fruggies, where all the vegetables and fruit families live," said Crunch ticking them off on his stalk-like fingers, "then there's Alternameats..."

"Where the meat and alternative families live?" asked Hanna.

Crunch nodded. "Then the villages of Dairprod and Grainprod."

"With the milk product families and the grain product families?" guessed Louis.

Crunch looked pleased the children had understood so quickly. "We have lived happily together for years. We jointly look after our children, the Growlings, and they were strong and healthy. Now the Growlings are becoming weak and sick. Our land has been invaded by Snackmen who are teaching our children to eat the wrong things. Look!" Crunch pointed to the ground near Louis' feet.

There was a little yellow blob running around yelping "Snack attack, snack attack." Suddenly it pounced, became all mouth and gobbled up a smarty

that had rolled off the blanket.

"Yuk, what a messy eater," remarked Louis as the little yellow blob chomped, and drooled, and smacked its lips, splattering bits of melted chocolate over Louis' feet.

"The Snackmen discovered that the mountains near here are made of chocolate," continued Crunch. "So they opened a chocolate quarry. Now our children go and snack on the mountain instead of eating the good foods at the villages. What can we do?"

The members of CLUB 4 thought for a moment.

"What you need," said Mai Lin thoughtfully "are some Super Food Heros and Heroines."

"Great idea!" yelled Louis, "I'll be Vitaman and I'll threaten to Glow and melt away all the chocolate."

"I'll be Go Girl," laughed Hanna. "I'll chase the Snackmen away with my extra energy that streams out of my finger tips and toes," and she stretched out her toes and felt them go hot with the excess energy.

Suddenly everything seemed to dissolve and disappear. Then Hanna realized her toes really were hot. She opened her eyes and looked down. She was back in her yard lying on the blanket and the sun had moved and was toasting her toes.

Hanna looked around at her friends. They were still asleep.

"What a funny dream," she thought. "I wonder how we chased off the Snackmen?"

Create A Food Hero Or Heroine

Objective

Students will review their knowledge of the four food groups by creating a food hero or heroine.

Materials Needed

the *4 Food Groups Poster* (to be made)

the *CLUB 4 Kids* poster
art paper and supplies
1 poster board

Procedure

1) Have the students make a *4 Food Groups Poster* from magazine pictures that have been cut out and placed in four section on the poster board. This should be done in the shape of a rainbow to follow Canada's Food Guide.

2) Introduce and review CLUB 4.

3) Using the *4 Food Groups Poster*, review the foods in the four food groups and their functions (GLOW, GROW and GO).

4) Discuss the hero and heroine in Hanna's dream. Who were they going to help? Who were they against?

5) Ask the students to imagine that the SNACKMAN has invaded our world.

6) Brainstorm some fun food heroes and heroines that could save us from the SNACKMAN. They can use any kind of good food as heroes and heroines, and the function of the food group as its super strength.

7) Students use the art supplies to

create their Super Food Heros and Heroines.

Follow Up

1) During Language Arts students write an adventure story about their food hero or heroine and Snackman.

2) Display the artwork and stories.

Club 4 Follow Up

Get together with your friends and act out your food hero and heroine stories.

What Goes On In A Dairy?

CLUB 4 was getting really interesting. At their last meeting Mai Lin, Chris, Hanna and Louis had each decided to find out something special about nutrition - something no one else in their club knew. That way they could surprise each other at a club meeting.

Chris thought and thought, and decided to find out more about milk. He knew about cows because his uncle ran a dairy farm, but what happened to the milk when it left the farm in the big refrigerated tankers? He persuaded his father to take him to visit a large dairy the next time they drove to Edmonton.

Mr Melnyk drove Chris up to the enormous dairy building at the same time as one of the large milk tankers arrived from the farm. Chris watched wide eyed as the tanker edged carefully into a bay where some white-suited dairy workers were waiting.

"Who are those people and what's going to happen to the milk now?" asked Chris.

"I think they are the laboratory workers," explained his father. "They taste the milk to make sure it's fresh, and then do a chemical analysis to see how much cream is in it. If the milk passes the test then it's pumped out of the tanker truck and into refrigerated holding tanks inside the dairy."

Chris and his father then walked into the dairy offices to see if they could have permission to visit the dairy.

"I'm sorry," said the office manager, "but we don't let people go in the

dairy. There is too much dangerous machinery and hot steam around."

"Hot steam?" said Chris in surprise. "What do you need that for?"

"The office manager smiled at him. "You are keen to find out about dairies aren't you? I'll tell you what I'll do. You can come up into the glass observation gallery that looks over the dairy, and I'll explain some of the machinery."

The manager stopped, and picked up two hard hats. "Here, I cannot let you in unless you wear these."

Chris proudly put on the hard hat and they climbed the stairs to the observation gallery. The noise from the machinery on the other side of the glass was deafening.

First the manager showed Chris the refrigerated holding tank. It was a giant stainless steel silo. It was so tall that Chris couldn't see the top.

"This holds 500,000 litres of milk," said the manager proudly, "and we have three of them."

"Wow," said Chris. "That's a lot of milk."

The manager explained that the milk was separated and the cream taken off. "Some of it stays separated and is sold as skim milk. The rest of the milk has different amounts of cream added back. This makes the 1%, 2% and homo milk sold in the store."

Chris looked down at the dairy. He couldn't see much milk because it was inside the shiny machinery. But here and there some was spilled on the floor. White suited workers wearing hard hats were hosing the floor with water.

"A dairy has to be spotlessly clean," explained the manager.

"What's the steam for?" asked Chris as he noticed some rising in the air.

"Milk has to be pasteurized to kill harmful bacteria or germs, and heat is the best way of doing it," explained the manager. "All milk is heated and then cooled again very quickly and refrigerated."

Then the manager pointed to the far end of the dairy. "If you look over there you will see an interesting machine."

Chris watched a machine that cut a long continuous tube of cartons to size. The carton bottom was sealed, milk poured in, a little tube sucked off the foam from the top, then the carton top was sealed up. The last thing to happen was a stamp that stamped the date on the seal at the top.

"Why do you put the date on everything?" asked Chris.

"So you can tell if the milk is fresh," explained the manager.

"I recognize those cartons. It's the milk we get," said Chris. "We get chocolate milk too. Do you make that here?"

"Yes we do, and ice cream, yogurt, and cottage cheese," said the manager with a grin.

"Mmm, my favourite," admitted Chris, rubbing his tummy.

The manager looked at his watch. "I'm sorry, but I have to go now. I'll show you the way back."

Chris and his father took off the

hard hats and thanked the manager for taking time with them. Just as they were leaving, the manager handed something to Chris - a small carton of milk.

"Gee, thanks. Now I know where it comes from," Chris said with a satisfied smile.

Many Kinds Of Milk

Objective

- 1) Students will identify the many kinds of milk products.
- 2) Students will become familiar with the appropriate serving size.

Materials Needed

Scrambled words worksheet The Milky Way
 4 Food Groups Poster (made in lesson 1)

Procedure

- 1) Using the 4 Food Groups poster, review and identify the different kinds of milk products.
- 2) Talk about servings and sizes - two to three servings a day.

A suggested serving is 250 mL of milk, 175 g cup of yogurt or 50 g cheddar cheese.

TEACHER'S NOTE: for further information see pages two and four in *Nutrition: the Ins and Outs*

- 3) Ask students to name their favourite dairy products. Write the suggestions on the board. Discuss better and best choices.

- 4) Hand out worksheet of scrambled names.

- 5) Students unscramble the names using the words on the board to help them.

Follow Up

- 1) At home, students cut out magazine pictures of milk products.
- 2) They bring them to school and the class makes a flow chart of the milk products (See diagram in *Nutrition: The Ins and Outs*).

Club 4 Follow Up

Check the milk in the refrigerator at home. Can you find the date stamp? Why is the date stamped on the milk carton?

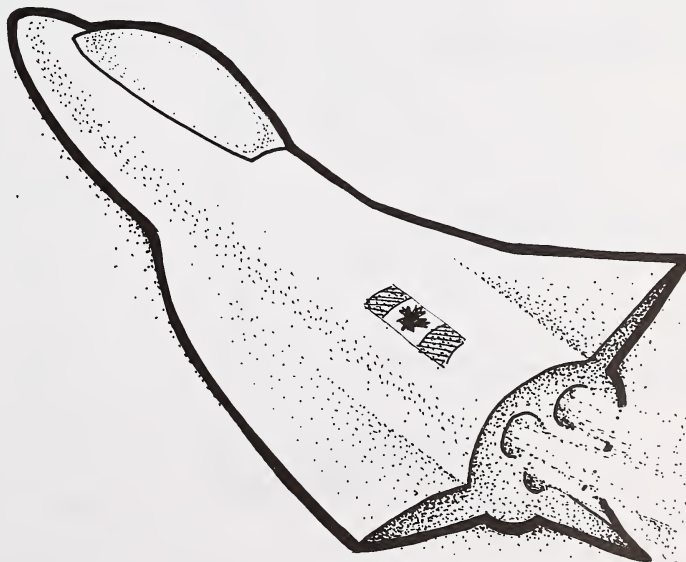
Answers to *Explore the Milky Way* worksheet

uytrgo - yogurt
 ilkm - milk
 eshech - cheese
 tgaetoc cesehe - cottage cheese
 coochleta klim - chocolate milk

Explore The Milky Way

Draw your face in the space ship.
You are exploring the Milky Way.
Look at the scrambled words in the stars.

Unscramble them, and name the stars in the Milky Way.



Something For Supper

Louis loved shopping, but this was the first time he had been allowed to do the grocery shopping on his own. Well, almost on his own.

His mother had gone to pick up some cleaning and had left Louis in the supermarket with the grocery list and an empty grocery cart. "I'll be back before you've finished," she called. "And see if you can find something good for supper."

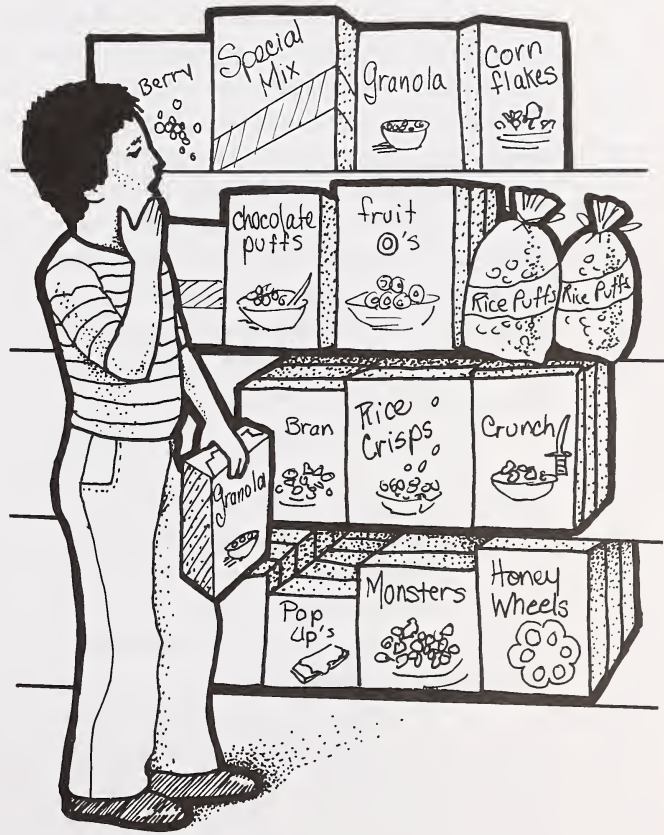
He pushed the cart slowly down the aisles trying to find the things on his mother's list. Juice and milk, he'd found that. Cereal, hmm, which cereal should he get? He stopped the cart and looked carefully at the different kinds. He liked the packages that had monsters on, but he knew that his mother wouldn't let him have ones containing sugar. He settled for a whole wheat cereal and went on to the vegetable area of the store.

Louis found oranges, apples, and bananas without trouble. He had to look closely to find the difference between the cabbage and the lettuce, but soon sorted that out. Next he found the potatoes and some carrots, then checked his list again.

"Something for supper," said his mother's writing. Louis stopped to think. Supper was an important meal for Louis' family. Everyone came in hungry from work and they usually ate a big meal with something from each food group. He looked at the food already in the shopping cart.

"If we drink milk, that's one food group, but no one but me likes milk to drink". Louis looked at the food again and

had a bright idea. "If I slice up one banana for each person, then pour a glass of milk over it, that's a dessert. That would be one serving each from the vegetables and fruit group and the milk products group. Now we need something from meat and alternatives. I know, peanut butter!"



Louis loved peanut butter. If he had the choice he would eat a peanut butter sandwich for breakfast, lunch, and supper every day. He pushed the shopping cart quickly to the shelves where he knew the peanut butter was kept. He looked at all the jars and tubs. There were different kinds. They were all his favourites and his mouth was watering. Just as he was about to lift down the biggest crunchiest jar he could find, he realized that wouldn't work. His mom and dad didn't like sandwiches for supper.

Louis decided to see what else he could find. He pushed the shopping cart over to the meat counter at the other side of the supermarket. There was an awful lot of meat. He didn't recognize most of it but he knew his mother didn't buy steaks because they cost too much. He was just wondering what to pick when he noticed a sign that said CHICKEN SPECIAL.

Chicken - all his family liked chicken. He checked the shopping cart to see if there were things they could have with it. Yes he already had potatoes, and some carrots. He carefully chose a chicken and added it to the cart.

Just then his mother came bustling up. "I'm sorry I was so long, Louis. Goodness, it looks as though you have nearly finished the shopping. Did you choose something for supper?"

Louis showed his mother the chicken and explained his dessert idea. His mother was delighted.

"You've done such a good job, I'll let you shop again." She gave him a hug and whispered in his ear. "You make the dessert, and I'll make some of my special gravy with the chicken."

"Hooray," said Louis, and they both went happily to the checkout.

Home Made Peanut Butter

Objective

To introduce students to an alternate in the meat and alternatives food group.

Materials Needed

4 Food Groups Poster (made in lesson 1)
 blender or food processor
 recipe (next page) and ingredients for peanut butter
Canada's Food Guide sheets (available from Publications Office, Alberta Agriculture, Food and Rural Development)

Procedure

- 1) Discuss what Louis and his family had for supper. Write the menu on the board as students remember.
- 2) Look at the *4 Food Groups Poster* and decide what groups the supper choices fell into.
- 3) Give out the copies of *Canada's Food Guide*. Students use them to work out what serving sizes Louis should eat.
- 4) Ask if anyone remembers what Louis first chose, and what food group it's found in (peanut butter). Explain that peanut butter is an alternative as it is high in protein and so is a GROW food.
- 5) Gather class around the blender (If you have a large class organize a parent volunteer with a blender and divide class into two groups so that everyone can see).
- 6) Follow peanut butter recipe from sheet included.

7) Enjoy on crackers.

Follow Up

Plan the menu for a school activity such as a picnic or party. Take a field trip to the local supermarket to purchase needed supplies. Notice how many meat and alternatives are found on the shelves.

Club 4 Follow Up

Learn song A Clever Cook Am I.

(Begin at middle C and sing a line on each note up the scale, the 9th line comes down the scale and the last line is sung to the notes C E G E C

C can be for chicken
 D for dumpling stew
 E for enchilada bake
 F for French bread too
 A for apricots
 B for broccoli and beans

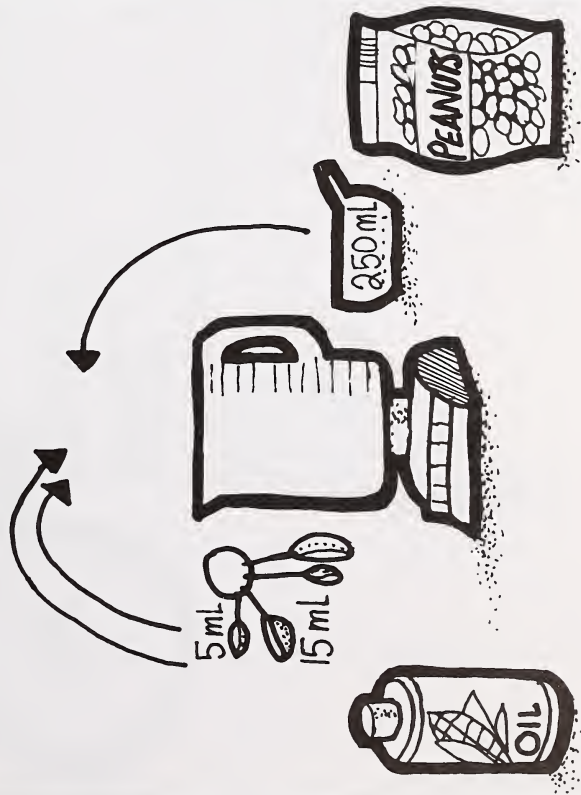
These are foods I like to make. A clever cook am I.

Peanut Butter

Ingredients:



- 1) Put peanuts and oil in electric blender.
- 2) Blend until the peanut butter is smooth.
- 3) Spread on bread and enjoy.



Visit To A Grain Elevator

Mai Lin loved the big grain elevators that stood by the railway siding. She had often cycled past and watched the farmer's trucks, loaded with wheat, drive into the entrance. She wondered what went on inside; did the farmer have to shovel the wheat grain out, or was it all sucked up in a giant vacuum cleaner?

She knew a grain elevator was a place where the grain was stored until it could be loaded onto a freight train. She had seen trains standing in the siding waiting to have their big blue and gold containers filled with grain. But she had never seen inside an elevator.

Instead of cycling past, Mai Lin turned her bike on to the dirt road and rode up to the elevator.

"Hi, Mr Schmidt. What happens

inside a grain elevator? Can you show me how it works?"

Mr Schmidt smiled and wiped his dusty hands on his coveralls. "Well, sure Mai Lin," he said, "but there isn't too much to see."

"Sure there is," said Mai Lin bouncing up and down on the floor. "Like this floor, it looks as though it should move."

"It does move," agreed Mr Schmidt. "You're standing on a giant weigh scale. When the farmer drives his truck in he comes right on here. We weigh his load, then he dumps all the wheat and it falls through the grating in the floor to a collecting bin underneath. Then we weigh the empty truck."



"Oh, I get it," said Mai Lin. So the difference in the weight is how much grain the farmer brought." She knelt down on the floor and peered through the grating. "What happens next?"

Mr Schmidt walked over to the wall and pointed to a pair of vertical tubes which came through the floor and ran up the wall to disappear through the ceiling. He opened a small door on one tube to show the belt with little scoops attached to it. "These scoops carry the grain from under the floor, right up to the top of the elevator. Then the wheat gets tipped out into a spout that takes it to a grain bin. If a bin is full I move the spout over to an empty one and fill that one up."

"Is the bin a sort of box?" asked Mai Lin.

"Yes, a tall, deep wooden box. There are lots of them up above us, and they are all full of wheat. When they are full the wheat is worth almost a million dollars."

"Wow!" Mai Lin looked up at the ceiling and tried to imagine the big boxes above her.

"If you can't see them, how do you know when they're full?" she asked.

"I'll show you something special," said Mr Schmidt. "I can't take you up there, but I can show you how I go."

They walked over to a small cage in the corner. Mr Schmidt stood inside. It was just big enough for one person. He closed the bar door and pointed to two ropes inside.

"See that first rope, Mai Lin. I'll hold it in both hands and tug on it."

Mai Lin pulled and gave a gasp of excitement as the cage rose a couple of feet in the air.

"Now I'll take hold of the other

rope and do the same thing."

This time the cage descended to the ground. Mr Schmidt opened the door and stepped out. "That cage is called a man lift. The ropes have weights that are the same as my body weight and make it easy to carry me all the way to the top of the elevator. I can then see the bins and check the motor and pulley for the conveyer belt. And that's it. Told you there wasn't much to see."

"I think there's loads to see," said Mai Lin. "But what happens when a train comes?"

"That's easy," said Mr Schmidt. "The train stops with an empty hopper under our chute and we pull the plug. The grain empties out just like water empties from your bathtub. It runs into the hopper and then the train takes it away. Some of the grain is sold to other countries and some goes to the flour mill."

Just then, they heard the rumble of a truck on the road.

"Better move your bike," warned Mr Schmidt. That farmer won't expect to see it on the weigh scale.

Mai Lin quickly grabbed her bike and moved out of the elevator. "Thanks, Mr Schmidt," she called. "Now I've something special to tell CLUB 4."

GRAIN PRODUCTS -

How Flour Is Made

Objective

- 1) The students will understand the importance of grain in our diet.
- 2) The students will understand the steps involved in flour production.

Materials Needed

- 4 Food Groups Poster* (made in lesson 1)
- Flour Production* worksheets (1 per student)
- scissors and glue for each student

Procedure

- 1) Discuss Mai Lin's visit to the grain elevator.
- 2) Ask the students how the grain is produced i.e., seed sown, harvested by combine, stored on farm, trucked to elevator.
- 3) Look at the *4 Food Groups* poster. Why do we need this food group in our diet? (GO food - energy). How much should we eat a day? (five - twelve servings)
- 4) Ask what main ingredient is used to make bread (flour).
- 5) Go through the steps from the grain elevator i.e., loaded on train, processed in factory, flour bag on shelf.
- 6) Hand out worksheets and students cut and paste steps in correct order.

Follow Up

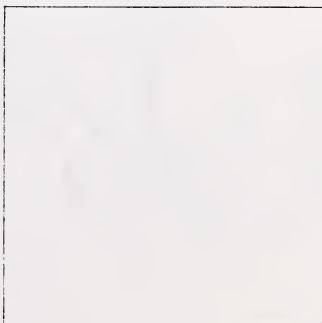
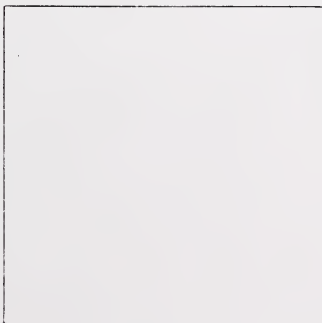
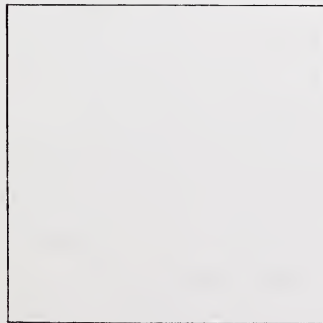
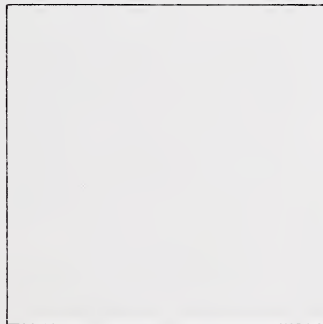
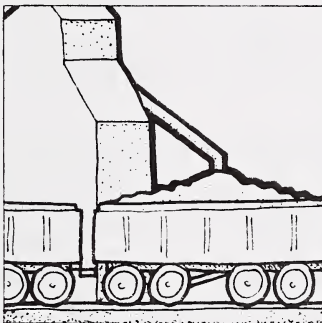
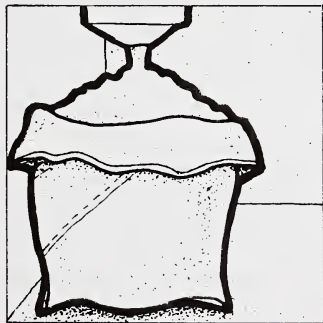
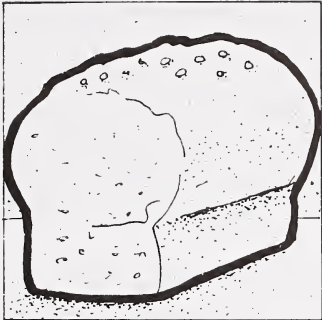
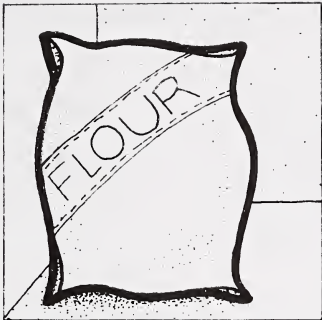
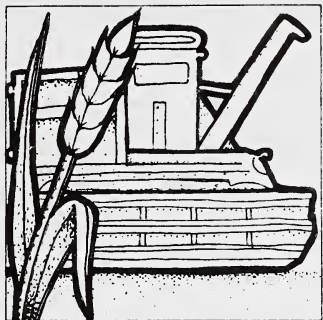
In a Math period, use the idea of the grain truck at the elevator weigh scale. Create some simple subtraction problems i.e. The farmer's truck weighed _____ when it was full, and _____ when it was empty. How much wheat did he deliver to the elevator?

Club 4 Follow Up

Next time you're in the supermarket, go to the baking needs section and see how many different kinds of flour are sold. OR

Go to the bakery and see how many kinds of bread are sold.

Flour Production



A Visit To The Farmer's Market

CLUB 4 were really excited. Hanna's mother and grandmother had grown so many raspberries that they decided to package them and sell them at the local farmer's market. CLUB 4 had helped with the picking. Their fingers were stained (so were their mouths). They were covered with scratches and mosquito bites, but they were all looking forward to the next morning. They were getting up early and going to the farmer's market with Mrs Bogart.

It was still early when they arrived at the community hall, but already the sun was hot. Mrs Bogart was glad that their farmer's market was held in the cool building and not outside in the baking sun.

They found their stall, and Mrs Bogart and Hanna covered it with a clean cloth. Then, very carefully, Hanna, Chris, Mai Lin and Louis unloaded the raspberries from the back of the station wagon. Mrs Bogart put up a sign saying "Fresh raspberries \$1.50 a box" and they sat down to wait for customers.

At nine thirty the doors opened and in came the customers. There were a lot of people who knew Mrs Bogart, and nearly everyone bought raspberries. The raspberries were so popular that by 10 o'clock they didn't have any left.

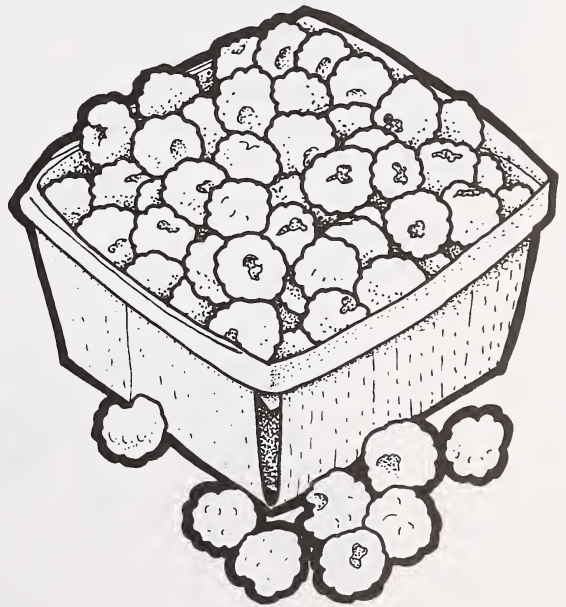
Mrs Bogart counted up the money. She then handed each Club 4 member a dollar for helping. "See if you can find something interesting while you are here," she said.

"Gee, thanks," said Louis with delight. "Come on you guys, let's see what's at everyone else's stall."

"Wow! Everything is here," said Mai Lin, looking from a stall selling home made doll clothes, to the honey man who sold tubs of honey and the small pieces of honeycomb that could be nibbled like candy.

"Look at the baking," marvelled Louis, his mouth watering. There were loaves of home made bread and piles of butter tarts, large and small cakes and even hot meat pies.

"What's that?" said Chris pointing to a vegetable stall. CLUB 4 went over to look. There were lots of vegetables at the stall, carrots and potatoes, beets and beans, and all the ones found in the supermarket.



There were even vegetables that weren't seen very often like bok choy, the Chinese cabbage that Mai Lin liked. But there in the centre of the stall was a giant vegetable that no one recognized.

It was a long, almost cylindrical shape, and a dark green colour. Hanna poked at it carefully with her finger. It seemed very hard. Chris tried to lift it with one hand, but it was too heavy.

"That's my giant marrow," said the stall owner proudly, "isn't it a beauty? Won first prize at the agricultural fair, that did," and he patted the marrow affectionately.

"Why are you selling it," asked Mai Lin curiously. "Don't you want to eat it?"

The man laughed. "Eh, there's too much there for me. By the time that marrow's stuffed and cooked, it will feed six or seven people. There's only me at my place."

Club 4 looked at each other. They were all having supper at Hanna's house tonight. They counted up how many people. Four of them, and Hanna's mother, and her grandmother, that made six people. Then they looked at the dollars in their hand.

"Er, how much is it?" said Hanna a little nervously.

"Four dollars to the right person,"

said the man with a twinkle in his eye.

"Would we count as the right people?" asked Chris, "and could you tell us how to cook it?"

The man grinned at Hanna. "You're Mrs Bogart's girl aren't you?" Hanna nodded.

"Well, if you take her this, she'll know how to cook it."

CLUB 4 put their money together and passed it to the vegetable farmer. He carefully lifted the giant marrow, gave it a last polish on his sleeve and popped it into a large Farmer's Market carrier bag.

"It will take two of you to carry it," he warned.

Hanna and Chris each grasped a handle and fought their way through the crowd to Mrs Bogart.

"Here," they grinned dropping the bag at her feet. "You told us to find something interesting."

"Fantastic!" cried Mrs Bogart as she peeked in the bag. "Who'd like stuffed marrow for supper tonight?"

That night everyone watched the marrow being stuffed with ground beef and cooked. It was voted delicious.

"I hope you have room for something else" said Mrs Bogart, and to a great cheer she brought out a big dish of raspberries.



TAKE A FRESH TASTE OF ALBERTA WITH YOU

**Farmers'
Market**

A Variety Of Vegetables

Objective

To familiarize students with the variety of vegetables and fruit available in their area.

Materials Needed

4 Food Groups Poster (made in lesson 1)
selected sample of the less usual vegetables found in the area

Club 4 Follow Up

Ask your parents if the whole family can try a vegetable they have not tried before.

Procedure

1) Review the vegetables and fruits mentioned in the story.

2) Using the poster to jog memory, ask students to name their favourite vegetables and fruits. Review GLOW concept and talk about serving sizes.

3) Invite a local gardener or the produce manager from the local supermarket to do a show and tell session with the produce (education week). OR

In an area where the native people use wild vegetables and fruit, invite one of the elders to lead a bush walk to see them.

Follow Up

Use an art period to make an ABC of vegetables and fruit. Allot each child one or two letters and a large sheet of paper for each letter. Pin up the resulting paintings as a frieze down the school corridor. (You may need to brainstorm some of the harder letters, ie. Zucchini, Yellow beans, Winter squash, Quince!)

A Bit Of Everything

CLUB 4 were lying in front of the TV having a meeting. At least, they were supposed to be having a meeting, but Bugs Bunny kept shooting across the screen and causing a distraction.

"What are you doing?" asked Chris's mother.

"We're doing our science project, Mrs Melnyk," said Louis, his eyes glued to the screen.

Mrs Melnyk walked across the room and turned the TV off. "I think you'll get on a lot faster without that," she remarked. "It's nearly lunch time and you've decided nothing."

Louis grinned and sat up yawning. "OK, come on Club 4. What are we going to do for the science fair?"

"I guess we should do something

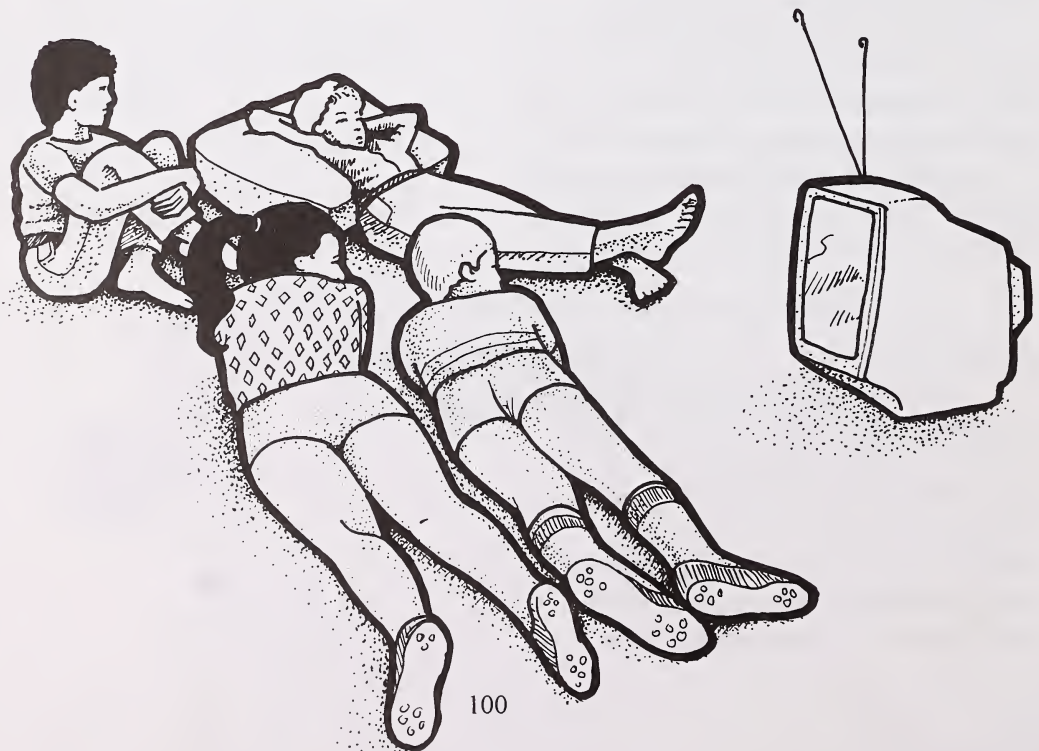
about nutrition," said Chris. "After all, we called ourselves CLUB 4 because of the four food groups."

"Can we do something that shows how to eat a balanced meal, how you have to eat bits of everything?" asked Louis.

"I've an idea," said Hanna eagerly. "How about a display called 'The Science of Good Eating and it'll show how to choose stuff from the four food groups.'"

"That's just a display though," objected Mai Lin. "I like exhibits where I can DO things, when I go to science fairs."

"I know, I know." Chris almost bounced off the sofa in his excitement. "We do the display at the back of the booth, and then set up that grocery bag activity at the front so people can do it."



"What's the grocery bag activity," said Louis, very puzzled.

"YOU remember," explained Hanna. "Our teacher brought in a bag full of groceries and we had to sort them out into the four food groups. Then we had to choose something from each group to make up a balanced meal."

"Oh yeah, I remember. I thought I'd chosen a bit of everything and then I found out everything I liked was an other foods," moaned Louis.

"That's your fault for liking junk food," said Chris, falling on top of Louis and poking him.

"Aw, it's you who thought milk chocolate bars should be in with the milk products," laughed Louis, giving Chris some friendly punches, and the two boys rolled around the floor like a couple of puppies.

"Hmmm, that's an odd science project," remarked Mrs Melnyk as she poked her head around the corner to see what was going on.

Despite all the distractions CLUB 4 finished their project in time for the Science Fair. They collected empty packets, cartons, and tins for the grocery bag activity and each of them made a panel for one of the four food groups. Then they found a copy of Canada's Food Guide and asked their teacher to get more copies for them.

"That way we can give it out to interested people," explained Chris. At the fair they took turns to man their booth and help people try sorting the grocery bag. Their teacher was very impressed, especially when she saw them handing out copies of the Canada's Food Guide.

"This display really teaches things," she said. "How would you like to put it

up in the classroom when the science fair is over? And by the way, may I please have a copy of the Food Guide to stick up on my fridge door?"

The Grocery Bag Activity

Objectives

- 1) To encourage students to recognize which food groups ordinary groceries belong to.
- 2) To familiarize the students with *Canada's Food Guide*.

Materials Needed

- 4 *Food Groups Poster* (made in lesson 1)
- copies of *Canada's Food Guide* (1 per student)
- a grocery bag containing a variety of empty tins and packages for each six students.

TEACHER'S NOTE: Make sure the four food groups and some other foods are represented. Plan for this activity in advance. If many packages are needed ask the students to collect some.

Procedure

- 1) Using the poster, review the foods in the four food groups. Discuss other foods.
- 2) Divide students into groups of six and hand out the grocery bags.
- 3) Each group of students classify the foods into the four food groups and other foods.
- 4) The groups move around to observe the results of each other's sorting.
- 5) Gather class together. Ask if any one saw something that they feel should have been in a different group. Discuss.
- 6) Hand out *Canada's Food Guide*.

Using it as reference, discuss the concepts of number of servings needed from each food group. Use examples from the grocery bags.

Follow Up

Do the Bang-Up Breakfast activity (see *Grade 1, Lesson 7*).

Club 4 Follow Up

Put up *Canada's Food Guide* on the refrigerator at home. Check your next meal against it.

Time For A Treat

Hanna's Grandma was really pleased. Hanna had spent all morning helping her prepare the vegetable harvest from the garden. The freezer was half filled with brightly coloured bags of carrots, beans, peas and broccoli. "Don't they look nice?" said Hanna.

"Wonderful," replied her Grandma. "So let's take a break and finish off the rest tomorrow."

Hanna washed her hands and took off her apron. "Can I go ride my bike now?" she asked.

"Sure," her Grandma found her purse and fiddled inside. "You've worked very hard Hanna. Here, go and buy yourself a treat." And she handed over a dollar.

Hanna was delighted. She rushed outside, jumped on her bike and rode down the street to the local store.

"Hi Darleen," she greeted the girl behind the counter. "Look, I've got a dollar to spend."

"We've got a new flavour of slush," offered Darleen. "You could get one of those for 50 cents and then spend the other 50 cents on candy."

Hanna laughed. "Oh boy, CLUB 4 would have a fit. We made a deal to try and only eat stuff that's good for us."

Darleen was interested. "Oh yeah, you and those other kids are in a nutrition club, aren't you?" She walked around the counter and stood looking at the candy display. "I guess it's pretty hard to get something nutritious for a dollar."

Hanna joined her. "There must be something other than gum and candy. Yes, how about beef jerky, or dried pepperoni sticks, they're made of meat."

"They cost \$1.50," pointed out Darleen. "I could weigh one apple though. That would cost less than a dollar."

"I get apples at home, that's not a special treat," said Hanna thinking hard as she surveyed the shelves. "What are those sesame treats?"

"Those are good," said Darleen enthusiastically. "It's a bar made of sesame seeds stuck together with honey. It's 40 cents."



"Oh, sounds like a lot of sugar, it's not much better than a chocolate bar," said Hanna doubtfully.

"Well, what about peanuts, they're also 40 cents? And there's a big packet of sunflower seeds for 60 cents." suggested Darleen. "Or you could get an ice milk bar."

"Yum, I love ice milk. If I buy that and some sunflower seeds, I get two things for my dollar and they are both better for me than candy. Besides, Mom said an occasional treat isn't bad."

Hanna paid Darleen and thanked her for helping. She picked up her purchases and rode off back to her house.

Did Hanna make the right treat choices? What would you have chosen?

A Dollar To Spend

Objective

To consider the most nutritious options when choosing a treat.

Materials Needed

A Dollar to Spend cartoon worksheet (1 per student)

Procedure

1) Discuss the story and Hanna's choices. If applicable, discuss how the day's food sample would fit in as a snack choice.

2) Discuss the things for a dollar available in the local store or nearest supermarket in terms of 'better and best'.

3) Make a list of the best choices on the board.

4) Hand out the worksheet.

5) Students exchange cartoons and discuss the comments.

Follow Up

Every student surveys five people in the school, to see what their favourite snacks are.

Club 4 Follow Up

Choose a nutritious treat next time you have allowance.

A Dollar To Spend

Read the story. Make up and draw in your own ending. Make sure it is a good snack choice.





There's Never Any Time

An Interactive Story

TEACHER'S NOTE: If you usually teach the story and lesson in two segments, allow double time for this story. Because it is interactive, the story and lesson are incorporated.

Objective

To make students aware of how lifestyle can affect choices for eating times.

Materials Needed

Canada's Food Guide (1 per student)

Instant Breakfast recipe, grade 3, lesson 10 (1 per student)

Procedure

1) Give out food guide.

2) Read story, stopping to interact with class at specified times.

Louis was always rushing around at the last minute, no matter what time his alarm woke him up. Somehow the time just seemed to fly by and he would end up running to catch the school bus with a piece of toast in his hand.

His mother and father grumbled. "Louis," they said, "you must become more organized. You have to leave time to eat properly."

"I'll try tomorrow," Louis promised. But tomorrow would come and once again Louis would have to run for the bus and miss his breakfast.



QUESTION

WHY IS IT WRONG TO MISS
BREAKFAST?

Louis' parents were not the only people who grumbled at him.

"Oh boy. Louis missed breakfast again," said Mai Lin, "and he's supposed to be in CLUB 4."

"Yesterday he didn't eat a proper lunch either," said Chris.

"Neither did I. We had a hockey practice. It's hard to eat if you're in a rush."

"I thought you had 20 minutes before hockey practice?" objected Mai Lin. "Isn't that when you're supposed to eat lunch?"

"Sure. But it doesn't work that way. We both had to finish some math, then get out the equipment, and then get dressed, so there was only about three minutes to eat."

QUESTION

HOW MANY PEOPLE IN THIS
CLASS SOMETIMES MISS LUNCH?

WHAT CAUSES YOU TO
SOMETIMES MISS LUNCH?

(List causes on board i.e.

- Parent unexpectedly out.
- Practice like hockey or choir
- Spent lunch money on something

else

- Ate lunch on school bus or at

recess

- Forgot lunch
- Didn't like what was packed

"What are we going to do?" asked Hanna. "There must be some way to eat sensibly when there's not much time."

Chris agreed. "Let's have a Club 4

meeting and see if we can think of something. If we meet at Louis' house, maybe his mom or dad will help."

That night CLUB 4 sat down around Louis' kitchen table with Louis' mom and dad.

"If you don't have time to have three proper meals, you have a choice. You could make your snack times count," explained Mrs Dumont.

"What do you mean, Mom?" asked Louis.

"Well, your body is like a car. It needs filling to make it run. A real car needs a tank full of gas. When the gas is used up what happens?" asked Mrs Dumont.

"The car stops," chanted CLUB 4. "Right," agreed Mrs Dumont, "and the same thing happens to your body. Now there are two ways to fill up a car. One way is to drive until the tank is almost empty and then fill up. The other is to keep topping up with gas when the tank is only half empty. That way you put a smaller amount in more often, but you never run out of gas."

Louis thought for a minute. "You mean we need food to run our bodies, right?"

"Right," agreed everyone.

"And most people 'fill up' three times a day, right?"

Everyone nodded.

"But we could 'fill up' a little more often instead? How?"

"You have to work out how many breaks you get in your day," said Mrs Dumont. "Times when you can snack."

Mr Dumont drew three lines on a piece of paper. "Look," he said, "this is breakfast, lunch and supper..."

TEACHER DRAW THREE
HORIZONTAL WELL SPACED LINES
ON BOARD

"... now what other breaks do you get?"

"We have recess in the morning and afternoon," offered Mai Lin.

Mr Dumont drew in two more lines for recess.

TEACHER ADD TWO LINES
SHOWING MORNING AND
AFTERNOON RECESS

"Any other breaks?" he asked.

"What about when we come home from school; I have a snack then," said Hanna.

"And I sometimes have a snack at night before I go to bed," said Louis.

Two more lines were added to the drawing.

TEACHER ADD IN TWO MORE LINES
IN APPROPRIATE PLACES.

"Now let's figure out what times these are," said Mr Dumont.

ASK CLASS TO GIVE TIMES FOR ALL
THESE BREAKS
(approximately 8, 10, 12, 2, 4, 6, 8)

"Wow," said Louis. "If I eat something at all those times I'll be as fat as a pig."

His mother and father burst out laughing.

"Remember what I said earlier," his mother smiled. "If you can't eat at the three main mealtimes, you have to make your snack times count. You eat a smaller meal every two hours, and it must be the right food, not junk food."

"I don't get it," said Louis.

"Think of the car again," explained his father. "The tank holds 30 litres of gas. Now that tank will only hold 30 litres, no matter if I fill it up when it's empty or if I fill it up when there is some gas already in. If it is only half empty, then I only add 15 litres of gas. Right?"

Louis nodded.

"Your body is the same. If you 'fill up' more often than three times a day, you have to take your daily food requirement and spread it out over several small meals instead of three big ones. Your body only needs so much energy. If you give it more than it needs, it 'overflows' and makes fat."

"OK, I understand," said Chris, "we look at what we eat for a big meal. Then we look at the *Canada's Food Guide* and see what we should eat each day. Then we divide everything we don't eat at the big meal between all the other times we take a quick snack."

"That's right," said Louis' parents. "Let's try it. Louis eats a big supper with us. We always have a meat serving, two or three servings of vegetables or fruit and milk to drink. Write that down and then divide all the other things he should eat, between the snack times."

DO THIS EXERCISE ON THE BOARD
WITH THE CLASS
(refer to *Canada's Food Guide*)

"Hey, that might work for me, no matter how busy I am," said Louis. "Let's try it tomorrow."

ASK HOW MANY STUDENTS THINK
THIS PLAN MIGHT WORK FOR
THEM.

DISCUSS ANY OTHER PLAN THAT
MIGHT WORK FOR YOUR
STUDENTS.

Give out the *Instant Breakfast* recipe
(grade 3, lesson 10) for those days when
they are in a hurry.

Follow Up

Use a Drama session to act out:

- a) leaving for school in a hurry.
- b) leaving for school with plenty of
time.

Club 4 Follow Up

On a day when you are in a hurry,
try the *Instant Breakfast* recipe (see
Grade 3, Lesson 10).

Snack Times Count

8:00 a.m. Breakfast

10:00 a.m. Morning Recess

12:00 p.m. Lunch

2:00 p.m. Afternoon Recess

4:00 p.m. After School

6:00 p.m. Supper

8:00 p.m. Before Bed



The Good Food Party

The food was ready, the table was set, and two small parcels were waiting to be unwrapped. All that was needed now were the guests. Mai Lin impatiently ran to look out of the window.

"Stop worrying. They'll soon be here," said her elder sister Cho San.

"It's still snowing though," Mai Lin said worriedly. "Maybe the roads are too slippery. Or maybe the car won't start."

"The roads are fine, the sanding crew has been out all day," said her father. "Besides I think I hear a car now."

Mai Lin rushed to the window again. "They're here," she shouted excitedly and rushed to the door.

"Happy Birthday, Mai Lin," Chris, Hanna and Louis called as they rushed down the path.

For a few moments there was complete chaos as everyone tried to talk at once while struggling to take off their boots and hats, and mitts and coats, and scarves and extra socks, and sweaters and ski-pants. Finally it was done and everyone crowded into Mai Lin's kitchen.

"Here's something to warm you up," said Mr Lee as he ladled hot chocolate into mugs. "But only one cup full, you have to leave room for the party food."

"Good, we're starving. Are we going to have something Chinese?" asked Chris.

"Wait and see," replied Mr Lee. "First, the games and the presents."

That afternoon the Lee's house was very noisy. CLUB 4 played Pass the Parcel and Musical Chairs. Then they

gave Mai Lin the bumps and watched while she opened her gifts.

"This is a great birthday," laughed Mai Lin as she put on the brightly coloured toe socks from Chris and Louis and pinned the watermelon broach from Hanna on her sweater.

"Come on kids, time for supper," called Cho San as she and Mr Lee put the finishing touches to the table.

"Wow, look at that!" cried Louis as they all sat down.

"It's a special CLUB 4 birthday party," smiled Mai Lin's father."

Right in the middle of the table was a big round plate. It was filled with brightly coloured raw vegetables. There were carrot and turnip sticks, cauliflower and mushrooms, celery, green and red pepper strips, and even tiny baby corn cobs. In the middle of the plate was a bowl of dip.

"What's that, Mr Lee?" asked Chris.

"That's a dip called hummus. It's made with chickpeas and it's very nutritious," replied Mr Lee.

Four hands picked up a vegetable, dunked it and tasted.

"Mmmm, that's good," said Hanna. "Now what's in that dish?" and she pointed to where steam was rising from a large pot.

Mr Lee whipped off the lid and announced, "macaroni and cheese."

"Hooray, that's my favourite," said Mai Lin, passing her plate.

"Mine too," said Louis, following her example.

Apart from the occasional crunch of vegetables, there was silence for a while as everyone ate. Then, when everyone was finished Cho San turned off the lights. "It's time for a birthday surprise," she explained.

There was a faint fizzing sound, and Mr Lee came in from the kitchen carrying a tray. On the tray was a melon. It had been hollowed out and laid on its side. The inside was full of little melon balls, pieces of oranges, apples and bananas and they all spilled out over the tray. The fizzing was from the lighted sparklers stuck on top of the melon.

"That's neat, it's Birthday Fruit Salad," said Chris, and started to sing, "Happy birthday to you."

And everyone joined in at the tops of their voices.

"Happy birthday dear Mai Lin, Happy birthday to you."

"It's instead of cake," explained Mai Lin, "So I get to wish with the first scoop." She closed her eyes, grasped the spoon, and dug in to the fruit salad.

There was a shout of laughter.

Mai Lin's eyes flew open. "What's the matter?" she asked.

"You should have wished for a bowl," giggled Hanna, looking at the spoonful of fruit that had landed in her lap!



Birthday Fruit Salad or Hummus Dip

Objective

Students consider some alternatives to traditional party foods.

Materials Needed

1 small melon
variety of seasonal fruits for making a class fruit salad
recipe sheet
OR
ingredients for making hummus dip
blender or food processor
recipe sheet
4 Food Groups Poster (made in lesson 1)

Procedure

1) Discuss Mai Lin's birthday party. What food groups did CLUB 4 eat. What is an appropriate serving size?

2) Following recipe card, show how to prepare the melon to make the *Birthday Fruit Salad*.

Students take turns using the melon baller.

OR

Use the alternative recipe and demonstrate how to make hummus.

3) Have a tasting session.

Follow Up

Use a Language Arts class for students to creatively describe their favourite food tastes. e.g. Oranges taste like a squirt of sunshine. Mushrooms taste like velvety foam. Peanut butter is a slippery crunch.

Club 4 Follow Up

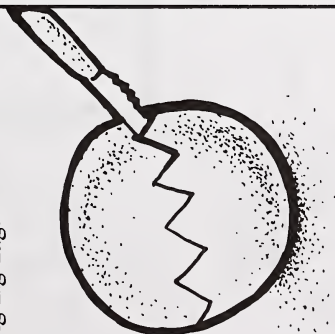
Plan your own nutritious party menu.

Birthday Fruit Salad

Ingredients:



1) Take a melon, using a sharp knife, cut around in a slanting zig-zag.



2) Pull apart and scrape out seeds.



3) Cut a thin slice from the long side so that the melon shell will balance on its side when placed on a plate.



5) Slice and add to the melon balls a selection of seasonal fresh fruit e.g. an apple, orange segments, a banana, some grapes etc.



6) Sprinkle the fruit with lemon juice and stir.



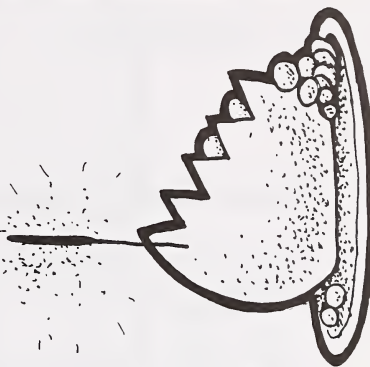
7) Spoon the fruit into the melon so that it spills out onto the plate like a cornucopia (horn of plenty).



4) Use a melon ball maker and scoop out the melon flesh into a bowl.



8) Serve with a sparkler stuck in the top of the melon.



Hummus

Ingredients:



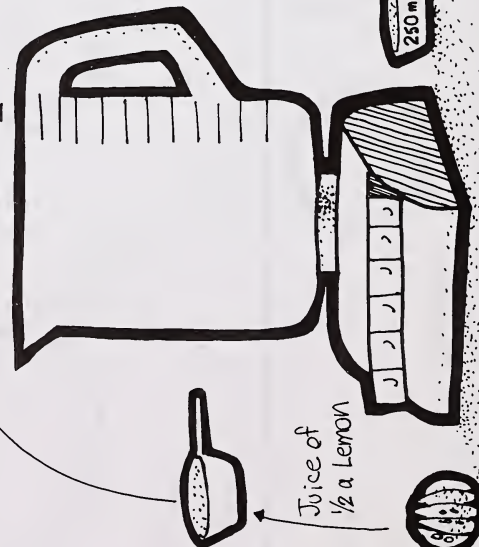
1) In a blender or food processor add ingredients.

250 mL cooked or canned chick-peas (garbanzos)

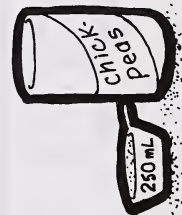
30 mL tahineh (ground sesame seeds)

juice of 1/2 lemon

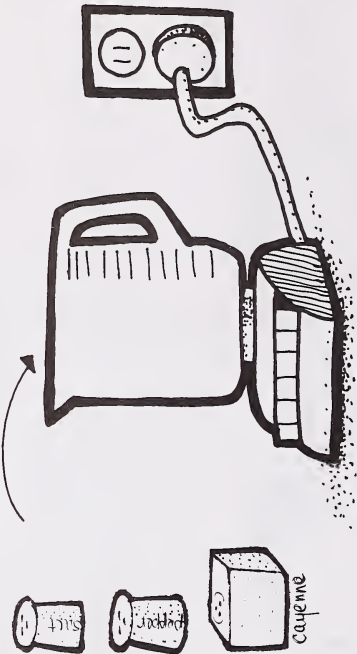
2 cloves of garlic,



Juice of
1/2 a Lemon



2) Blend ingredients together. Add salt, pepper and cayenne to taste.



3) Put into serving bowl and sprinkle with parsley.

4) Serve as a dip with raw vegetables, pita bread or whole wheat crackers.



Open Wide Please

There was a buzz of excitement in the classroom. Chris leaned over to Louis. "What's going on?" he whispered.

"It's nothing," Louis whispered back. "Just some kids freaking out because they heard the Dental Hygienist is coming into our classroom."

Chris was puzzled. "Why are they freaking out?"

"Dunno," Louis shrugged. "Maybe they forgot to clean their teeth."

"Oh-oh," said Chris picking up the hem of his T-shirt and frantically scrubbing at his front teeth.

It was too late. The classroom door opened and in walked a white-coated figure carrying a bag.

"Good morning children. I'm Debby Harris and I'm going to talk to you about dental hygiene, the ways to keep our teeth clean and healthy."

Debby opened her bag and pulled out a pile of toothbrushes, fluoride toothpaste, and some dental floss.

First she gave everyone a toothbrush and then she made them practice the best way to clean their teeth.

"This is different from the way I usually do it," said Louis going up and down and giving little flicks. "I just go across."

"Me too," Chris muttered with his mouth full of toothbrush.

Next Debby explained why everyone needs to clean their teeth.

"All food leaves a deposit called plaque coating the teeth," she said. "But some foods are worse than others. Does

any one know which foods are the worst?"

Mai Lin's hand shot up and Debby pointed to her.

"Sugar," said Mai Lin "and candy, and stuff like that."

Debby nodded and dropped her voice "sugar is a tooth's deadly enemy. It mixes with the plaque and turns it into acid. Now you all know what acid does, don't you?"

Several hands shot up and Debby pointed to Louis.

"It eats into things," he grinned making clawing motions with his hands.



Debby smiled. "Yes, just like that. Sugar makes an acid. The acid literally eats away your teeth. It makes holes in the top coating of enamel and continues eating away until it hits a nerve. Then ... OUCH!"

Debby clapped her hand to the side of her face and gave a howl of agony. Everyone jumped.

"Toothache," said Debby in a normal voice, "and it will make you jump just like that."

Everyone relaxed and grinned.

"Boy," said Chris, "you really had us going then."

"Well," said Debby briskly. "It's up to you. How are YOU going to stop the enemy getting to your teeth?"

Kick The Sweet Snack Habit

Objectives

- 1) Students will become aware of the dangers of sugar to teeth.
- 2) Students will be encouraged to regularly clean their teeth.

Materials Needed

Kick the Sweet Snack worksheet

Follow Up

Make up and perform puppet plays about a visit to the dentist.

Club 4 Follow Up

Have a dental check up OR check your cleaning and flossing habits.

Procedure

1) Ask students to name all the food they eat (occasionally or frequently) that contain sugar. List them on one side of the board.

2) Ask students for reasons why we need our teeth. List on the other side of the board (include things like nice smile, shape of face etc.).

3) For each sweet snack listed ask volunteers to cross it out and substitute the name of a nutritious snack.

4) Talk about some other ways to keep teeth healthy i.e., brushing, flossing, drinking fluoridated water, drinking ordinary water at end of meal to wash away food particles, eating carrots, hard cheese and apples etc. (Refer to the health unit for clarification in these areas).

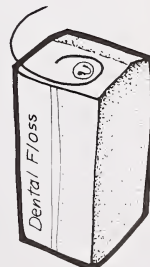
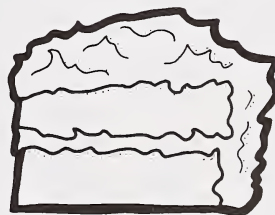
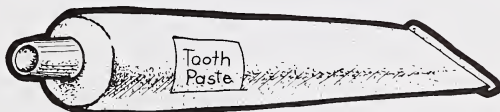
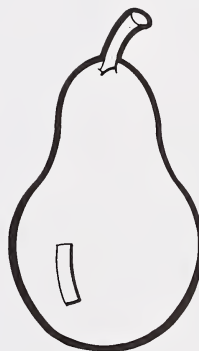
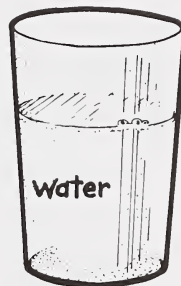
5) Give out worksheets. Students cross out the things that harm their teeth, and circle the things that help their teeth.

6) Students write on the back of the worksheet some causes and preventative measures for tooth decay.

Kick The Sweet Snack Habit

Circle the things that help keep your teeth healthy.

Cross out the things that can harm your teeth.









Explore Nutritious Alberta

Grade 3

The Special Holiday

TEACHER'S NOTE: As this is the first lesson of the Grade Three unit, be sure to pin up the *CLUB 4 Kids* poster and introduce the CLUB 4 members before reading the story. Refer to *Grade One Introduction*.

By the end of this unit, the students will have produced an "Explore Nutritious Alberta" booklet to take home. If the follow up classes cannot be used to make covers for the booklet, the students could be asked to bring a three hole duotang.

Mai Lin, Chris, Hanna and Louis were best friends. They went to the same school, had formed CLUB 4 together, and now they were going on holiday together. The only thing was, they were not sure where they were going for their holiday.

"Your Dad sure can keep a secret, Louis," laughed Chris as he dumped his sleeping bag, pillow and suitcase on the drive. "Didn't he even give you a teeny clue about where we're going?"

"Nope." Louis shook his head. "All he and Mom said is that it's a special CLUB 4 holiday."

"Hmmm, I wonder if that's a clue, or if they just mean the four of us are

going away?" said Hanna thoughtfully.

"I think it means we are going to do something about food because that's what CLUB 4 is about" said Mai Lin. "Maybe we are going to eat in lots of different restaurants."

"Naw, we packed the camping things," objected Louis.

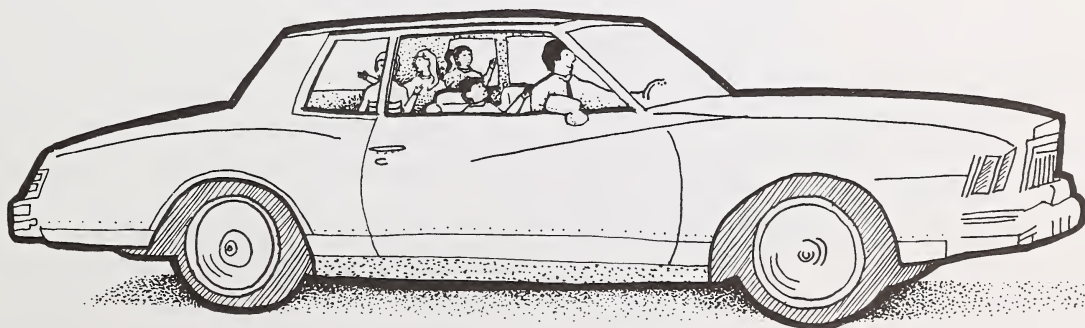
"Well maybe we're going to cook different foods," said Mai Lin. "Anyway, we'll soon find out."

But they didn't find out for ages. Mr and Mrs Dumont kept them guessing about the holiday while they packed the trailer and tent, and all the food and the suitcases, and even after they were in the car. In fact it was only when they were driving down the highway that Mrs Dumont turned round and passed out some maps to each person.

"Now we'll tell you about the CLUB 4 holiday," she laughed.

Louis, Chris, Hanna, and Mai Lin all looked eagerly at their maps.

"This is a map of Alberta," said Mai Lin.



"That's right," replied Mrs Dumont.
"We decided to explore Alberta for our holiday, and seeing as CLUB 4 was coming with us we decided to do it a special way. We will camp around the province and see some of the places where Alberta produces food."

"But what's there to see?" asked Chris.

"You'd be surprised," said Mrs Dumont with a smile. "We've arranged for you to see something from every food group. We'll visit a cheese factory, spend a day on a ranch, visit a farm and see a harvesting operation."

"Hey, sounds fun," said Hanna.

"We'll do some other things too, but those can stay a surprise for a while longer," said Mr Dumont. "But right now I've got to get on with the driving. We are due in Bashaw at two this afternoon."

"What's at Bashaw, Dad?" asked Louis.

"Look at your map and see if you can find out," said Mr Dumont.

What did Louis find at Bashaw?
ANSWER; LOUIS FOUND THE-.....
SYMBOL AT BASHAW (cheese)

Buy Alberta Products

Objective

- 1) To review Canada's Food Guide.
- 2) To make students aware of the many nutritious foods produced and processed in Alberta.

Materials Needed

- Alberta food product labels
- the *4 Food Groups Poster* (to be made)
- the *CLUB 4 Kids* poster
- Alberta Food Product* maps (1 per student)
- coloured pencils
- Club 4 Follow Up sheet with *Alberta Made Badge* (1 per student)
- 1 poster board

Procedure

1) Have the students make a *4 Food Groups Poster* from magazine pictures that have been cut out and placed in four sections on the poster board. This should be done in the shape of a rainbow to follow Canada's Food Guide.

2) Give out *Alberta Food Product* maps. Explain that this is going to be one page in an *Explore Nutritious Alberta* book. It must be kept safe.

Explain that in the next few weeks the students are going to follow the CLUB 4 trip around Alberta and identify the places they visit and the food produced there.

3) Using the posters, review the four food groups, serving amounts and examples of servings each day.

(Reference: page 4 *Nutrition: The Ins*

and Outs)

4) Identify the food product symbols on the map. Find Bashaw and see what Louis found on the map. Colour it yellow.

5) Add a green star on the map to show where your school is situated.

6) Students examine maps and see if they can find a food product from each of the four food groups, produced near them. Use the green pencil to circle them.

7) Show the *Alberta Made* logo.

8) Give out the Club 4 Followup sheet with the *Alberta Made* logo.

9) Students colour, cut out and wear their badge home to do the CLUB 4 follow up.

Note: The "Alberta Made" logo is a symbol that legally belongs to the Alberta Food Processors Association. Members of the association are entitled to use the logo on their labels. For more information, contact the association at 10450 Mayfield Road, Edmonton, AB., T5P 4P4.

Follow Up

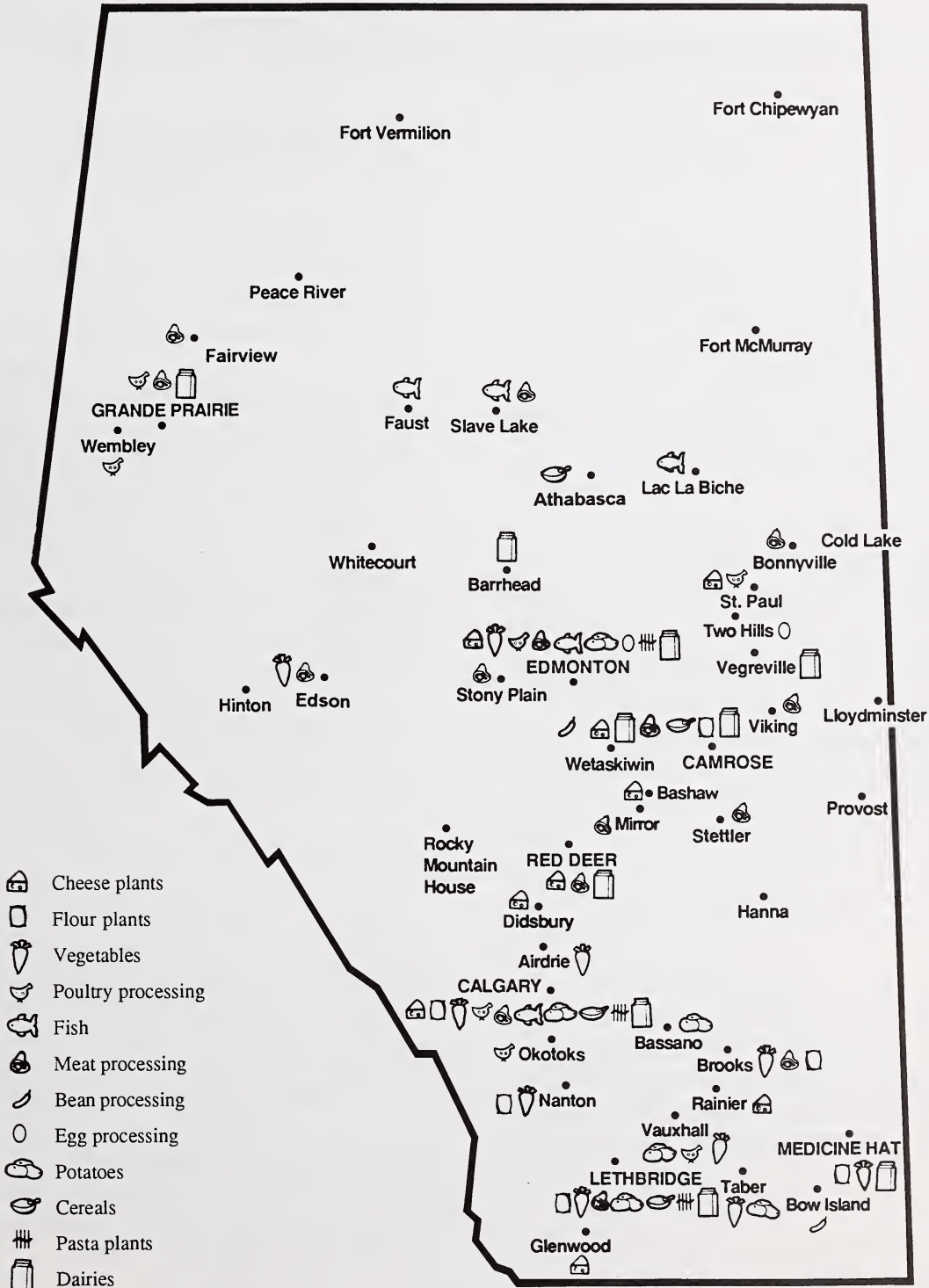
Use an Art period for each student to make a cover to contain the *Explore Nutritious Alberta* sheets to be done in the next few weeks. Add the map to the inside of the booklet.

Club 4 Follow Up

Go home and check either refrigerator, cupboard (or freezer if you have one) to see if you can find any products with the *Alberta Made* logo. If not, check the store next time you are there. See what products they have with the logo on. Write the name of a product you've found, on the back of your badge.



Nutritious Alberta Map



Cheese Please

TEACHER'S NOTE: Students take out their maps of Alberta and find Bashaw. Draw a red line from your school to Bashaw.

It was early in the afternoon when Mr Dumont drove CLUB 4 into the small town of Bashaw. The cheese factory was easy to find and they drove up to it with a flourish.

Mr and Mrs Dumont, Louis, Mai Lin, Chris and Hanna were met at the door by Clive, one of the factory workers. He asked them to put on white coats and hairnets before they could enter the factory.

"We have to be very careful and very clean here," he said as they dressed. "Nothing must get dropped into the cheese. This factory is cleaned every day and inspected once a month."

"It looks just like the dairy I saw when I was in grade two," said Chris, looking around at all the stainless steel equipment.

"Part of it is a dairy," replied Clive. He pointed to some large tanks. "Those are the milk holding tanks. When milk comes to us from the farmer we process it just like a normal dairy. The milk is tested for antibiotics and disease and we taste it to see if it's fresh. Then it goes in those holding tanks and waits to be pasteurized. Can you remember what pasteurized means?"

Chris nodded. "It means that the milk is heated just enough to kill harmful bacteria."

Clive was pleased. "That's right,

and once it's pasteurized then the cheesemaking can begin." He pointed to some large enclosed vats. "Unfortunately you cannot see much, but the milk is pumped into these vats and is heated slightly. Then we add some colouring, usually orange for cheddar. We also add a starter culture, something like yogurt, and rennet."

"What's rennet?" asked Hanna.

"Rennet is a special ingredient. It makes the milk coagulate, or clot together, a bit like jelly."

Louis grinned. "Cheese jelly, yuk." Clive pretended he hadn't heard.

"The rennet turns the milk mixture into one big lump, or curd, sitting in some liquid called whey. This big cheese jelly is cut up into smaller pieces and it's heated gently. This makes more whey. Then some of the whey is drawn off and the rest of the cheese curds and whey are pumped through a tube onto the cheddaring table over here."

CLUB 4 were pleased. At last there was something other than stainless steel machinery to see. There on the cheddaring table was a great mass of soft orangey cheese curds. It looked rather like a gigantic mass of orange plasticine. It smelt very cheesy.

"How long is it left like this?" asked Louis.

"Until it 'knips' or sticks together," replied Clive, and he pointed to a stack of big orange blocks. "As soon as it starts to stick together it is cut into blocks and piled one on top of another. This presses out more whey and makes the cheese firmer."

How long do you leave it before it's dry enough to sell?" asked Mai Lin.

Clive smiled. "Oh, it's not ready yet. It has to be cut up some more, this time into tiny strips, and tipped into an enormous mixing bowl. Then salt is added and the whole mess is mixed up with giant paddles. It is then poured, 18 kg at a time, into square shapes called hoops. These are pressed overnight, and in the morning it looks like the cheese in the store. It just needs wrapping in plastic."

Hanna was impressed. "Overnight! You mean all that milk is made into cheese in one day?"

"It sure is," replied Clive. "You have to work with milk products quickly, while they are fresh."

Clive then showed Club 4 the storage area where the cheese was aged. "The longer it's kept, the stronger it tastes, he explained.

"So mild cheese is sold just after it's been made?" asked Mai Lin.

"That's right," said Clive. "Medium cheese is kept about six to eight months. Old cheese is kept for eight months to five years."

"Wow, that's old alright," laughed Hanna. "Now I know why I only like mild cheese."

QUESTION: What kind of cheese do you like best?

Home Made Cottage Cheese

Objective

- 1) To review the milk products food group.
- 2) To demonstrate the making of a simple form of cheese.
- 3) To help students understand the terms "curds and whey" and the action of rennet.

Materials Needed

- 4 Food Groups Poster (made in lesson 1)
- the student's books with *Nutritious Alberta Maps*
- some hot water
- picture of inside the cheese factory (see photos included with this resource)
- 2 bowls, one that fits inside the other
- 1 cup of milk
- 1 dessert rennet tablet (available at some supermarkets as dessert junket or use 1/4 of the cheese rennet tablets available in most rural grocery stores)
- some cheese crackers
- small sieve
- paper and pencils

TEACHER'S NOTE: If a large class either double quantities, or ask a parent to help. Divide the class into two groups and each make a batch.

Procedure

- 1) Review milk products group with emphasis on cheese.
- 2) Ask if anyone knows what curds and whey mean - explain and demonstrate by making cottage cheese (see recipe).

- 3) Use the map and identify the nearest cheese producing area to your school.

- 4) Students copy the cheese recipe on paper and add to their Explore Nutritious Alberta books.

Follow Up

Create a wall display of labels and pictures of different kinds of cheese.

Display the home made cheese recipe in the centre. When the chart is finished, use it to discuss the place of cheese in the milk products group - GROW foods.

Club 4 Follow Up

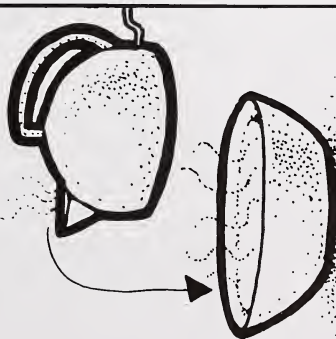
Make yourself a cheddar cheese sandwich for lunch. Notice whether it's mild, medium, or aged (also called sharp or old) cheese. While in the refrigerator notice any other milk products.

Homemade Cottage Cheese

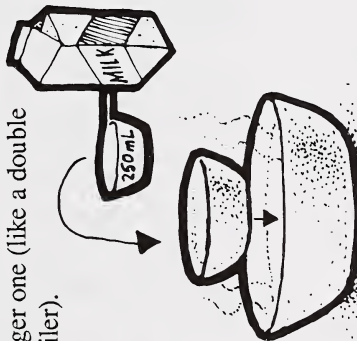
Ingredients:



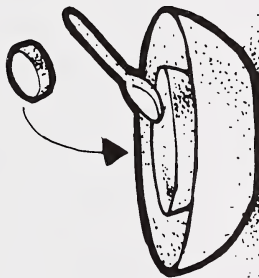
1) Heat some water in electric kettle, and pour into large bowl.



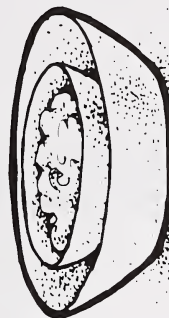
2) Pour 250 mL of milk in smaller bowl and rest inside larger one (like a double boiler).



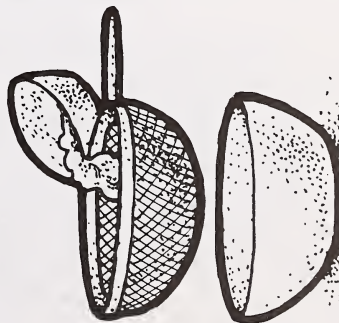
3) Add rennet tablet to the milk and stir gently until dissolved.



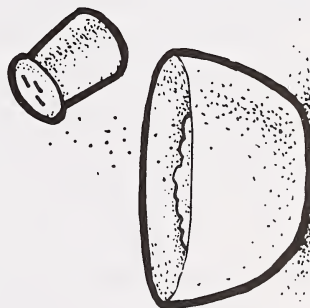
4) Watch while it curdles and thickens (a couple of minutes).



5) When curds have formed, pour off whey through sieve.



6) If desired, add a small amount of salt to the curds and mix in with a fork.



7) Serve curded cheese on crackers. Enjoy.



Wanna Be A Cow Hand

"Yippey-i-aaay, Yippy-i-oooh," sang Chris, Hanna, Mai Lin and Louis at the tops of their voices. "Ghost riders in the sky-ay."

Louis' mother plugged her ears. "Pipe down, you'll frighten all the cattle for miles around," she complained as they drove past Brooks. "Just hold your horses, we'll be at the ranch in a few minutes."

"Hold your horses! Very funny, Mrs Dumont," giggled Mai Lin, and all of CLUB 4 clicked their teeth and reined in as though riding a galloping pony.

The four friends were excited. This part of their holiday was the much promised ranch visit. All the children loved horses and had decided they would be ranch hands when they grew up.

The ranch was in a beautiful part of Alberta. Miles and miles of rolling prairie stretched out in all directions. The cattle were just brown dots on the golden grass, baked by the sun and drying winds.

"You kids ride?" asked Jerry, a ranch hand with a large battered cowboy hat.

CLUB 4 looked at the ranch horses. They seemed rather large. "Well, sort of," said Hanna shyly, "but we've never ridden proper ranch horses."

Jerry grinned. "Aw, up with you. These are as quiet as babies. Just sit tight and stay calm and quiet like real cow hands."

In no time, everyone was mounted and riding gently over the prairie towards a distant herd of cows.

"A good cow hand's job is not to

frighten the cattle, but just to watch them," said Jerry. "We make sure the cows are eating well and have no diseases, and are given a chance to raise their calves in peace."

"This is a big ranch," remarked Louis as he looked around and saw no fences between him and the horizon.

Jerry nodded. "Middling," he said. "We have 250 head of cattle and you have to have at least 50 acres per cow, so you work it out."

The kids laughed.

"Come on. We're on holiday," grinned Mai Lin. "We'll do it when we get back to school."

Soon they got near to the cows and calves. They reined in their horses and watched quietly while Jerry rode his horse slowly into the middle of the herd and looked carefully at each cow and calf.

"A ranch is just another name for a breeding farm," Jerry explained. "We raise as many calves as we can. We make sure the mothers are healthy so the calves are healthy and it's a constant job because a cow can't tell you it doesn't feel well."

"How do you know then?" asked Chris.

"By observation," replied Jerry. "A cow hand is in the saddle all day riding in and out of the herd just looking at them. You learn to notice behaviour patterns, coat conditions, running noses and eyes, or a limp. Oh, there's a hundred and one little signs that tell you if a cow or calf is not one hundred per cent."

"And how do you learn it?" said Hanna eagerly. "How can I learn to be a cow hand?"

"I reckon that might be a problem," said Jerry slowly. "See, there's no university teaches you to be a cow hand. I learnt from riding with a cow hand when I was a little kid. I rode with the other cow hands until I could think like a cow. Once I could think like a cow, then the ranch employed me. Mind you, I had to learn other things too. We do our own veterinarian work on the ranch, so I had to learn all about cow medicine. And I did go to a roping school to learn to work the rope so I could catch the cows for branding." He laughed. "Then I had to relearn how to rope with real live calves. They sure move fast."

"Oh boy," said Hanna, "you mean you do all that stuff they do at the rodeo?"

Jerry nodded. "Yup. All that rodeo stuff is just a fancy way of doin' the ranching jobs." He looked around the

cattle. "I reckon we better leave this bunch now. Don't want to spook them and cause a stampede."

CLUB 4 had a lot to think about on the way back. Hanna was really disappointed.

"I did want to be a cow hand," she said. "But if my mom doesn't go and work on a ranch, I guess I've had it!"

"Cheer up," said Mrs Dumont. "Maybe you can go and do some other work on a ranch. There's more than cow hands employed here. Then you could watch and learn to be a cow hand."

Hanna grinned. "OK. Maybe I can go to roping school next holiday." And Hanna trotted happily back to the ranch house.

QUESTION: Work out how large the ranch is.

250 x 50 acres =

Relate this to the size of the school yard or a nearby farm.



Lesson Activity

Objective

- 1) To review the meat and alternatives food group.
- 2) To introduce students to the ranching industry in Alberta.

Procedure

- 1) Students find Brooks on their maps. Draw a red line from Bashaw to Brooks. Colour the ranching symbol.
- 2) Ask why ranching is important. Discuss the importance of meat in our diet. (GROW FOOD with special relationship to tissues and muscles).
- 3) Ask what we do if we don't eat meat. (Alternatives - check poster and discuss fish, eggs, beans, tofu etc.)
- 4) Discuss ranch life. Ask the students what they know of the different jobs on a ranch. List them on the board.
- 5) Students write a story about life on a ranch. The story is then added to their *Explore Nutritious Alberta* book.

Materials Needed

- Explore Nutritious Alberta* booklets including map
- pencils and clean paper
- 4 Food Groups Poster* (made in lesson 1)
- photo of a ranch (see photos included with this resource)

Follow Up

Use an art period to make a class mural about 'Life on a Ranch'. Display it on the wall.

Club 4 Follow Up

Use the idea that meat helps muscles grow. Have a meat or alternative snack. Follow it by an Active Living exercise, like push ups, that helps muscle development.

A Different Kind Of Jungle

TEACHER'S NOTE: Students get out their *Explore Nutritious Alberta* booklets. Ask students to find Taber. Draw red line from BROOKS to TABER to see where Club 4 are going next.

The day was hot and there was barely any wind. Louis' parents and CLUB 4 had all the car windows open in an effort to keep cool.

"When will we be there Mom?" asked Louis, fretfully.

"Not long now," said Mrs Dumont cheerfully. "It's about another 20 minutes to Taber."

CLUB 4 groaned. "Sometimes driving in a car for a long time is a drag," grumbled Mai Lin.

"Here, have an apple," said Mr Dumont passing a large bagful to the kids.

Everyone was very thankful when Louis' mother finally drove the car into a small farmyard just outside Taber. There waiting on the farmhouse porch was a white-haired Chinese lady. Mai Lin nearly fell out of the car in excitement.

"It's my grandma," she yelled at the top of her voice. "You never told me we were coming to visit Grandma," as she ran to give her grandma a great big hug.

Louis' parents smiled. "You never asked," they teased. "Besides we told you this CLUB 4 holiday would be full of surprises."

Mai Lin introduced Hanna, Chris and Louis to her grandma and then looked at Louis' parents. "You must already know Grandma," she said.

"Actually we have only spoken on the phone," said Mrs Dumont as she clasped Grandma Lee's hand. "When we were fixing up the holiday, your grandma suggested we might like to see the corn fields."

"Then after you've seen the farm we'll have a barbecue with lots of corn on the cob," said Mai Lin's grandma.

"Hooray, corn on the cob is one of my favourites," cheered Chris.

They took a walk in the corn fields. The sweetcorn plants were tall, so tall that they towered over the CLUB 4 members, as they walked carefully between the rows.

"It's like walking through the jungle," whispered Louis. "Listen, it's kind of creepy."

The four children stood very still. The whole corn patch seemed alive. The broad dry leaves of the corn plant swayed and rubbed together in the summer breeze. The heavy cobs nodded and danced just above the children's heads and the air was filled with a hint rustling as though the plants were talking to each other. Insects and mosquitoes buzzed around the children's faces and they could smell the dusty earth beneath their feet.

"It's a whole other world," said Hanna. Louis stretched up and bent down one of the ripening corn cobs, and the club members looked at how the kernels grew

in straight rows and were protected by the strands of corn silk and the broad leaves.

"It's all wrapped up like a parcel," remarked Chris.

Just then they heard a sound. Some one was banging on a pan lid. "Corn on the cob time," came a distant shout.

"Great, I'm starving," said Mai Lin and the four friends ran carefully through the corn jungle to taste the best of the crop.



Lesson Activity

Objective

- 1) To review the vegetables and fruit food group.
- 2) To encourage students to try growing vegetables.

Materials Needed

- 4 *Food Groups Poster* (made in lesson 1)
- paper and pencils for all students
- the Vegetable Garden worksheet*
- the Explore Nutritious Alberta* booklets
- photo of field of sweet corn (included in the photo section of this resource)

Procedure

- 1) Show 4 *Food Groups Poster*.
- 2) Students colour the picture of a corn cob by Taber.
- 3) Ask how many students have eaten corn on the cob. Ask what other kinds of corn people have tried (creamed, tinned, corn fritters etc.). What food group does corn belong to? What is the function of this food group? (GLOW) Discuss serving sizes (125 mL)
- 4) Discuss what other vegetables grow in Alberta (slant this to your area). Tell students they are going to have a chance to design their own vegetable garden.
- 5) Give out the *Vegetable Garden* worksheets.
- 6) Students use the information sheet to draw and design their own

vegetable plot on the blank paper.

- 7) Students add the finished designs to their *Explore Nutritious Alberta* books.

Follow Up

Learn the song Working in my Garden. (Tune: "I've been workin' on the railroad")

I've been workin' in my garden,
All the live-long day;
I've been working in my garden,
Cut'n grass and weeds away.
Can't you see the carrots growing,
Bigger'n better ev'ry morn?
Can't you taste the good fresh corncobs,
Full of juicy corn?

Club 4 Follow Up

Slice tops (approx one cm) from a variety of vegetables such as carrots, turnips, parsnips. Place the tops in saucers and add enough water so it comes half way up the side of the vegetables. Place saucers on a window ledge and watch the leaves sprout. They will start growing in a couple of days. Observe the differences in the leaves.

Design A Vegetable Garden

Fresh vegetables and fruit make you GLOW with health. You should eat five to ten servings a day. Read the following planting information and then draw a picture of how you would plant a vegetable garden so you could have fresh vegetables throughout the summer.

Plant tall plants at back and short ones at front to allow sun to reach them all. Choose plants that mature at different times so you have fresh vegetables all summer.

Plants that grow within 10 weeks:

- endive
- corn

Plants that grow within 3-4 weeks:

- radish
- parsley

Plants that grow within 6 weeks:

- lettuce

Plants that grow within 8 weeks:

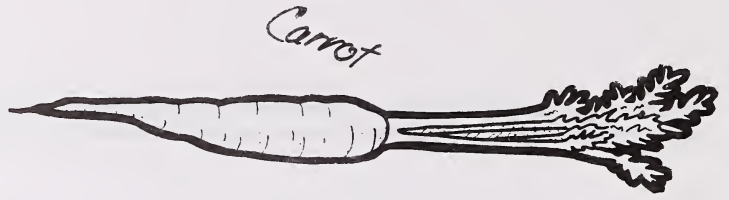
- beans

Plants that grow within 9 weeks:

- carrots
- cucumbers
- peas
- beets

Plants that grow within 9 weeks in the garden if they are started indoors several weeks earlier:

- broccoli
- cabbage
- red cabbage
- cauliflower
- bell pepper



Carrot



Cabbage



Radish



Brussels
sprouts



Lettuce



Parsley



Sweet Corn

Vegetable Garden



Things Aren't What They Used To Be

"Things sure aren't what they used to be," said Mrs Gitter as she drove the truck across the bumpy field toward the distant combine. "In the old days of harvesting, I'd have spent all my time in the kitchen cooking for the threshing crew. Now I drive the truck to catch the grain and Mr Gitter drives the combine. It sure beats cooking."

CLUB 4 were really surprised. They were spending the day watching the harvesting on the Gitter's farm, near Camrose. They had thought they would use a pitchfork to toss bundles. Instead they were sitting in a truck that was going over a bumpy field. The combine cut, threshed, and dumped the grain into the truck box behind them.

"I guessed we'd see a combine doing the harvesting but I hadn't realized it did nearly everything," remarked Chris.

"And I didn't know that farmers use computers. That one in the farm kitchen sure surprised me," said Hanna.

"Farming's changed," said Mrs Gitter as she slowed down and drove the truck under the grain auger from the combine. "It's not enough to know what's happening to the harvest on the prairies. We have to know what's going on in India and Russia as well.

"What's India and Russia got to do with your harvest?" asked Mai Lin as the grain collected in the combine auger and she watched it pour into the back of the truck.

"Wheat is one of the most

important grains in the world because many countries use flour to make some form of bread. But on our farms we don't only grow wheat. We also grow oats and barley and canola. Now we need to know what crops to grow each year, so the computer information on other countries helps us decide."

"I still don't get it," said Mai Lin.

Mrs Gitter checked the combine auger. It had finished emptying so she pulled the truck over to the side of the field and stopped. "Let's sit in the sunshine and I'll try and explain," she said, opening the truck door and leaping out.

Chris, Hanna, Mai Lin and Louis followed her example and sat on grass at the edge of the field.

Mrs Gitter pointed to a distant grain elevator. "That's where we truck our wheat to."

Mai Lin nodded. "I went inside a grain elevator once. A truck drives inside and the grain is weighed. Then it's stored in bins there till the train comes."

"That's right, Mai Lin, but each farm is only allowed to sell so much grain to the elevator in one year. If we produce more wheat than our allowance then we usually have to store it on our farm, or sell it privately.

"Who buys the wheat?" asked Louis, chewing a piece of straw.

"The Canadian Wheat Board buys it, but the farmers in Canada can grow more wheat than Canadians can eat, so the Board sells the extra to countries that need it."

"So you mean Russia and India buy our wheat?" asked Mai Lin.

Mrs Gitter nodded. "Yes, but Russia and India also grow wheat, so they only buy Canadian wheat when they have a bad harvest."

"I get it," said Chris eagerly, "the computer helps to tell you when other countries have good or bad harvests."

"That's right, Chris," agreed Mrs Gitter. "We punch in information about weather, harvest, prices and markets from all around the world. The computer then sorts it all out and tells us what crop has most chance of being sold."

"So that's the crop you plant next time?" suggested Hanna.

"Yes, and this year it was wheat, so let's drive it over to the elevator," replied Mrs Gitter.

Louis shook his head. "Wow, farming's really complicated. I thought a farmer just had to know how to run tractors and look after animals and grow crops."

Mrs Gitter laughed. "No way, Louis. We have to know how to work and program computers, know about world geography, understand mathematics and the grain sales, know about the chemistry of fertilizers and weed killers and what they do to our land. Farm people have to know about lots of things."

Louis sighed. "I wouldn't mind being a farmer, but I guess I'd better stay at school a bit longer." He sat up suddenly. "Hey, now I've a real good reason to ask my Dad if we can have a computer for Christmas!"

QUESTIONS

- 1) What is wheat made into?
(flour)
- 2) What is flour made into?
(bread)
- 3) What food group do these belong to?

Lesson Activity

Objective

- 1) To review the Grain Products food group.
- 2) Students will recognize some of the many forms of bread.

Materials Needed

- 4 *Food Groups Poster* (made in lesson 1)
- the *Explore Nutritious Alberta* booklets
- The Bread* worksheets
- World map
- Photo of machinery combining a wheat field (included with photo section)

Procedure

- 1) Have students identify the various foods in the grain products group and the serving sizes. Discuss the importance of bread in our diet.
- 2) Students draw red line from Taber to Camrose on their map.
- 3) Show class the world map. Pick out where Canada, Russia and India are.
- 4) Ask why is it important to grow wheat - what food is made from wheat? (bread) Ask what other grains are sometimes made into bread? (rye, corn, etc.)
- 5) Give out worksheets and students match the multicultural breads and their descriptions.
- 6) Add finished worksheets to *Explore Nutritious Alberta* books.

Follow Up

Use an art period to make dough sculptures (see worksheet for recipe).

OR

Relate to Social Studies - pioneering skills such as harvesting and threshing. Bread making could be demonstrated by a parent volunteer.

Club 4 Follow Up

Ask parents to try and find a different kind of bread when they shop.

Breads

Italian Easter bread - I am a plain bread in the form of a wreath. Coloured eggs are placed in my dough so that they look like they are resting in a nest.

Pancakes or Crepes - I am flat and thin. I may be eaten for breakfast with maple syrup, or for other meals rolled round interesting fillings.

Irish Freckle Bread - I come from Ireland. I am made with flour and potatoes and stuffed so full of raisins that the Irish say I have freckles.

Hot Cross Buns - We are small and round with a cross on top. The English serve us only on Good Friday but in Canada we are eaten for several weeks before Easter. There is a nursery rhyme about us.

Babka - My name means 'old lady' in Polish because I look like an old woman's wide skirt. I am also served in Czechoslovakia.

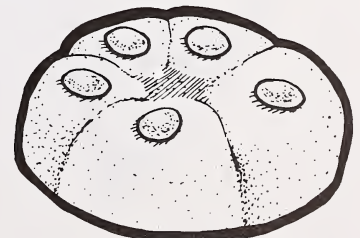
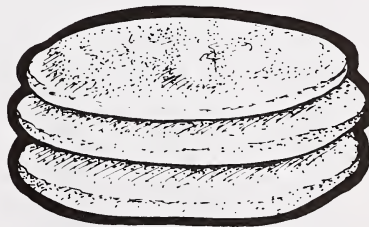
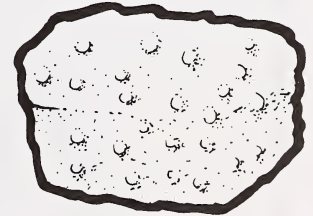
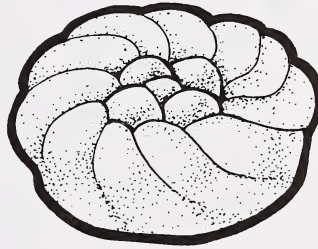
Pita - I am a flat bread from the Middle East. I am sometimes known as pocket bread as I can be split and filled with meat and vegetables.

Bread is a basic food in many countries around the world.

Bread is a GO food and belongs to the grain products food group. You should eat 5-12 servings a day from this group.

Look at these drawings of interesting breads from around the world. Read the descriptions below. See if you can match a picture with a description.

Draw a red line from the illustration to the correct description.

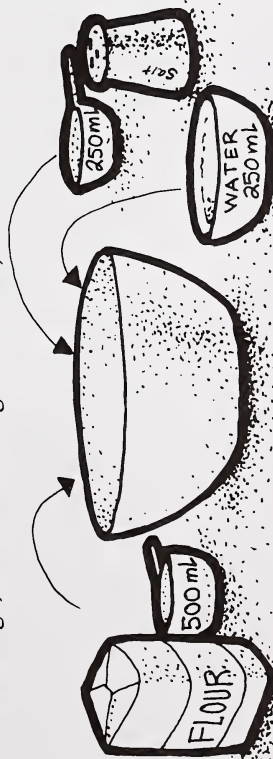


Dough Recipe

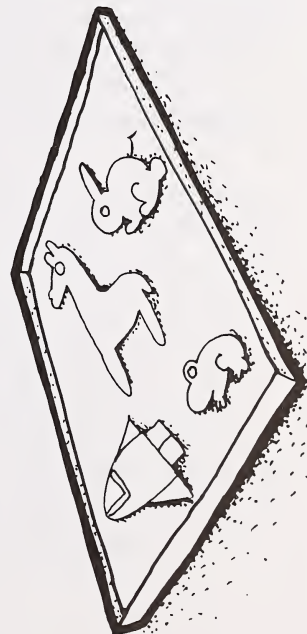
Ingredients:



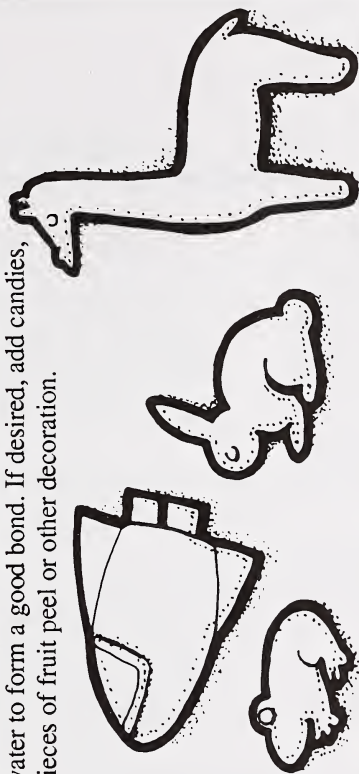
1) In a bowl, stir together the salt and flour. Slowly add the cold water, a small amount at a time. If this is too stiff, add a little more water. Knead the dough for about five minutes. (If you wish to tint the dough, add food coloring to the water).



3) Once the sculpture has been completed, bake the dough on a cookie sheet at 125 C for 1 hour 15 mins to 2 hours, or until hard.



2) To shape the dough, take a piece in your hand and work it to the desired shape. If you are joining pieces, moisten the surfaces with water to form a good bond. If desired, add candies, pieces of fruit peel or other decoration.



4) When cool, paint the dough with water colors or food dye. To protect from moisture, apply a thin varnish coating or spray-on lacquer.



I Am What I Eat

"Hey. Look at the skyscrapers. Is that Edmonton?"

"It sure is Hanna." Mrs Dumont carefully changed highway lanes. "Time for CLUB 4 to start looking for signs. We want a road that goes to the University of Alberta."

"The University?" said Hanna in astonishment. "What are we going there for?"

Mrs Dumont laughed. "I told you this holiday would be full of surprises."

"Yes, but you also said it would be a CLUB 4 holiday, doing nutrition things, like the ranch, and the harvest and stuff," questioned Louis.

"Well, we've had a look at the different kinds of food produced in Alberta," replied Mrs Dumont, "so now we are going to look at what happens to your body when you eat food."

They parked by a large yellow building. They walked down an echoey concrete corridor, through some doors and into a room full of exercise bicycles and odd-looking electrical equipment.

"Hi," said a cheery voice. "You people must be the CLUB 4 group. I'm Shelley, your fitness expert."

Mr and Mrs Dumont introduced themselves and the CLUB 4 members and explained that this visit was a surprise for Chris, Mai Lin, Hanna and Louis.

Shelley smiled. "In that case, I'd better explain what this place is and what we do," she grinned. "And I hope you're ready for a work out."

Chris flexed his muscles. "Good, I need to move, we've been sitting in the car

for ages."

"This is one of the main fitness units in Canada, explained Shelley.

"People come here from all over Alberta to assess their body needs in fitness and nutrition. The most well known people who come here for fitness checks are the Oilers."

"The Oilers," gasped Hanna, looking at the exercise bicycles. "You mean Bill Ranford may have sat on that bicycle seat?"

Shelley laughed. "He's sat on one of them for sure, but I don't know which one."

"Why would the Oilers come here?" asked Chris. "They're fit Fit FIT!"

"Yes, but they need to know their weak points and strengthen them. Athletes like the Oilers also keep a check on their weight. What they eat and how they exercise is very important."

"You mean all that Input-Output stuff?" asked Chris.

Shelley nodded. "Yes, your body is like a machine, and food is the fuel you put into it. Body movement is one of the ways the fuel gets burned up. The more food you eat, the more fuel you put into your body, and the more active you have to be to burn it all up. The food is the input and the activities you do are the output. In other words, you are what you eat, and to lead a healthy life you have to balance your input and output."

"Yup, or you get fat like my Dad," said Mai Lin. "But he's going to badminton classes now and he says he feels better. Why does exercise make you feel better?"

"It's because it gets your blood circulating and that exercises the heart and makes it perform better. You also burn up extra calories which means you lose weight, so your body isn't carrying extra fat around."

Mai Lin grinned. "That's a lot of reasons. We had ice cream today, we'd better start working out now."

First Shelley weighed everyone and measured their heights. Then she fastened a little belt with black buttons around their chests. Next she set them up on the exercise bikes and plugged the wires from the belt into a machine with dials.

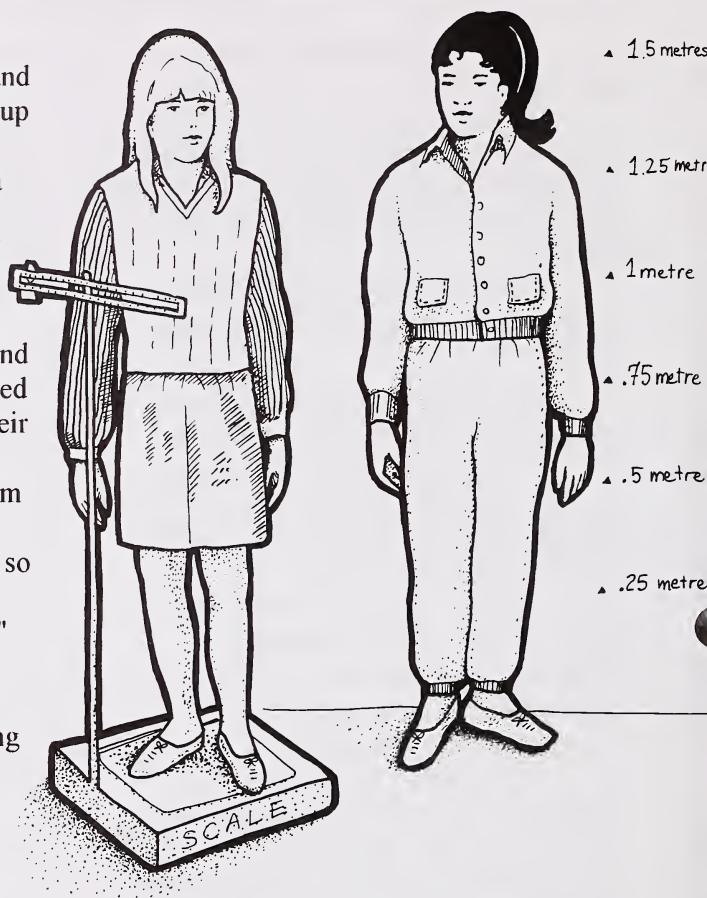
"OK, CLUB 4, I've wired you up so that your heart rate will register on the machine as you exercise. So off you go."

For a while nothing was heard in the fitness centre except the whir of the bicycles. Soon there was heavy breathing and panting as the work became harder and harder.

"You're doing fine," encouraged Shelley. "Keep it up a bit longer."

"Phew, this is like pedalling uphill on a hot day," gasped Louis as the sweat dripped off his nose. "I guess I'm not as fit as I thought I was."

"Everyone can improve their own fitness," encouraged Shelley, "even the Oilers. So come on Louis, let's see if you are as fit as they are!"



Input And Output

Objective

The students will become aware of the relationship between lifestyle, nutrition and exercise.

Materials Needed

the lifestyle profiles from Grade 1 Lesson 10
4 Food Groups Poster (made in lesson 1)
The Explore Nutritious Alberta books
pens and red pencil

Procedure

1) Using the Alberta maps, students draw a red line from Camrose to Edmonton.

2) Discuss the concept of Input and Output. Make a list on the board of the physical activities students do.

3) Divide the students into pairs or small groups and give out the ten lifestyle profiles - grade 1 lesson 10.

4) Within each group, one student studies the person profiled and the other student/s compiles a list of questions to ask about lifestyle, input and output. Questions could cover exercise, how much and when, what he/she has for breakfast, lunch, or supper, favourite snacks.

5) The student with the profile then role plays the person the group studied. They use the information on the profile as a basis but they can also use their imaginations and their knowledge of nutrition to give a picture of a well balanced person.

6) The other student/s questions them about their lifestyle, exercise and food they eat.

7) This could be done several times by swapping the profiles between groups.

Follow Up

Do a Fitness class in the Gym or with an approved exercise video.

Club 4 Follow Up

Ask the students to choose a nutritious snack. Ask students to role play their favourite "Active Living" activity.

Bok Choy And Chopsticks

"I'm hungry Dad. When are we going to eat?" said Louis from the back seat of the car.

"Two Hills is coming up soon," replied Mr Dumont, "there's a good Chinese restaurant there. Want to try it?"

"Great," said Mai Lin. "I've not had Chinese food all holiday; I've missed it."

Mrs Dumont smiled. "You can help us choose the food, Mai Lin. I never know what to order."

CLUB 4 and Mr and Mrs Dumont soon found themselves seated in a large restaurant booth with room for all six of them. Mai Lin picked up the menu and looked at it.

"Instead of everyone ordering for themselves, why don't we order several different dishes and put them in the middle of the table so we can all try them?" she suggested.

Mrs Dumont nodded. "Good idea, Mai Lin. That way we will be able to try new things."

Mai Lin looked around at everyone. "Will you trust me?" she grinned.

"Yes," said Mr and Mrs Dumont, politely.

"NO," yelled the other members of CLUB 4, and everyone laughed.

Mai Lin grinned, turn to the waiter and ordered a meal - in Chinese. CLUB 4 looked at her in amazement.

"I didn't know you spoke Chinese," said Hanna.

"I don't speak it to you because you don't understand it," replied Mai Lin, "but

we always speak it at home when there is no one else around. Dad taught Cho San and I when we were babies."

The waiter arrived with a pot of Chinese tea and small handleless cups. While Mai Lin poured out the green tea, the waiter removed the knives and forks.

Louis was puzzled. "Hey, I thought we were going to eat here," he asked Mai Lin. She just grinned again.

The waiter gave everyone a Chinese bowl, spoon and a pair of chopsticks.



Hanna picked them up and tried to hold them in one hand. One flew across the table and hit Mr Dumont.

"Oh oh," he laughed, "I think this meal is going to take some time to eat."

Mai Lin showed everyone how to hold the chopsticks and then the food started to arrive.

"This is a fun way to eat," said Chris as he managed to grasp a piece of broccoli and lift it into his bowl.

"It is if you can catch the food," laughed Hanna as she dropped a piece of chicken from her chopsticks for the third time.

They tried won ton soup, beef and broccoli, chicken and snow peas, and a mixture of Chinese vegetables that included Bok Choy, a kind of Chinese cabbage. They also ate lots of rice.

"Hmm, we must try this more often," said Mr Dumont wiping his mouth with the serviette.

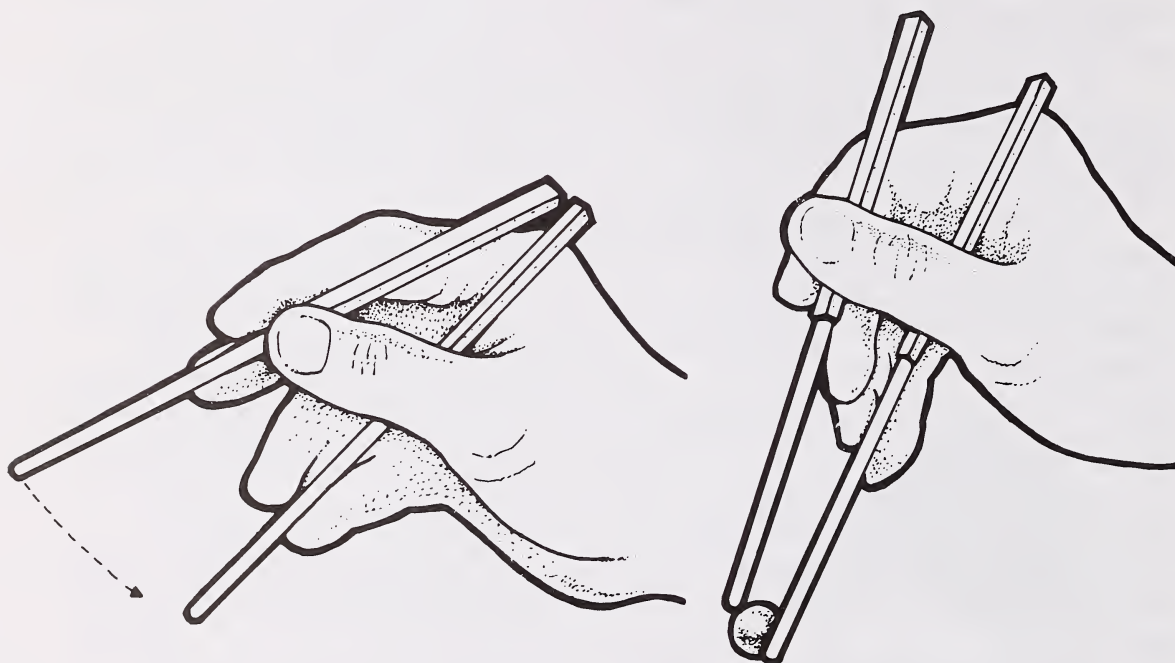
Mrs Dumont surveyed the table. There were bits of food scattered all over it. "I think we'd better practice longer with chopsticks before coming back again."

"I have just the thing for you, Madame," said the waiter appearing at the table. He gave each person a small packet. Inside were a pair of wooden chopsticks.

"Oh thank you, thank you" smiled CLUB 4.

Chris fitted them into his finger and thumb and opened and shut them. "Hey, great. I'll try them at home on my breakfast cereal," he laughed.

SUGGESTION: Using two pencils, see if the children can hold chopsticks.



Find The Multicultural Food

Objective

To heighten student's awareness of the many multicultural foods found in Alberta.

Materials Needed

Explore Nutritious Alberta

Booklets

Hidden Word Puzzle worksheet (1 per student)

Procedure

- 1) On their maps, students draw a red line from Edmonton to Two Hills.
- 2) Ask what ethnic food students in class are familiar with. List them on the board and discuss them.
- 3) Give out the worksheets. Ask the students if they have any questions about the names of the foods they are looking for.
- 4) Students find the hidden foods. Go over answers as a class and classify foods found in the four food groups.
- 5) Add hidden food puzzle to *Explore Nutritious Alberta* books.

Follow Up

Invite a parent to demonstrate a food and cooking utensil from their family culture.

Club 4 Follow Up

Make a list of all the different foods you have tried. Write down what food group they come from.

Hidden Word Puzzle Answers

F	N	U	S	X	T	Q	C	B	H	I	R	S	H	S	T	E	W	B	
A	E	B	V	B	F	M	H	G	B	F	J	X	V	I	K	X	U	A	E
S	Z	Q	J	W	S	V	I	D	O	W	E	V	M	G	P	A	N	A	I
U	A	Z	B	X	Q	G	L	W	C	A	A	G	V	H	S	N	Y	V	P
W	P	G	I	K	X	B	I	K	M	S	D	H	D	F	O	R	D	W	S
D	N	V	M	P	R	G	Z	X	X	S	O	S	S	C	R	B	L	J	D
C	J	P	D	D	N	X	X	V	W	T	X	L	K	U	T	I	J	D	R
C	H	O	P	S	U	E	Y	I	D	D	B	L	C	T	W	A	E	L	E
C	T	F	M	E	D	J	S	O	X	H	L	O	U	T	L	F	C	O	H
W	L	O	F	B	F	S	G	V	E	E	I	R	K	M	K	D	T	O	P
P	G	A	J	B	C	L	C	W	H	G	N	E	F	C	J	I	K	K	E
I	L	E	M	H	B	H	W	G	A	G	T	G	E	W	P	N	X	G	H
K	U	M	E	C	J	E	G	I	M	R	Z	A	T	G	N	V	F	N	S
Z	E	E	W	K	H	B	T	X	B	O	X	B	A	P	I	T	A	C	L
M	S	D	E	H	U	O	H	A	U	L	N	B	C	W	N	E	F	P	X
E	R	W	L	W	G	P	W	M	R	L	I	A	H	W	T	W	S	L	G
B	O	R	S	C	H	T	H	D	G	S	Z	C	E	K	P	R	X	Y	X
O	N	I	O	N	S	O	U	P	E	T	R	J	E	H	G	Y	K	X	P
I	T	T	E	H	G	A	P	S	R	R	O	T	S	R	E	M	P	H	J
V	M	K	H	B	Q	B	T	S	U	A	Y	B	E	Y	P	A	Z	N	W

Hidden Word Puzzle

Hidden in the puzzle are the names of 20 multicultural foods. Their names are listed below.

To find the hidden foods check the

puzzle up, down, diagonally, across and backwards, and draw a line around the words you find.

F N U S X T Q C B H I R I S H S T E W B
A E B V B F M H G B F J X V I K X U A E
S Z Q J W S V I D O W E V M G P A N A I
U A Z B X Q G L W C A A G V H S N Y V P
W P G I K X B I K M S D H D F O R D W S
D N V M P R G Z X X S O S S C R B L J D
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I T T E H G A P S R R O T S R E M P H J
V M K H B Q B T S U A Y B E Y P A Z N W

Here are the hidden foods:

BANNOCK

BLINTZ

BORSCHT

CABBAGE ROLLS

CHILI

CHOP SUEY

CLAM CHOWDER

CURRY

EGG ROLLS

FETA CHEESE

HAMBURGER

HOT DOG

IRISH STEW

ONION SOUP

PITA

PIZZA

SHEPHERD'S PIE

SPAGHETTI

SWISS CHEESE

TACO

The Tasting Party

There was one more day left of the summer holiday. CLUB 4 were back at home but wanted to finish the holiday with a bang before returning to school.

"Let's have a party," suggested Hanna, "and everyone bring something."

"But not hot dogs and stuff," complained Louis. "We always have those at parties. Let's have something different, like that Chinese food Mai Lin organized in Two Hills."

"I've got an idea," said Chris

excitedly. "Why don't we each bring something from the country our families came from?"

"My family comes from Canada," said Louis.

"I know that," said Chris, "but your mom makes bannock like your grandma did, right?" Louis nodded.

"So that's a special Canadian food. Can you bring some of that?"

"I guess so. I'll ask," said Louis.



"Have you ever tried Chinese sausage?" asked Mai Lin. "I could bring some of that."

"OK." Chris turned to Hanna. "What about you?"

Hanna thought for a minute. "If Louis brings bannock and Mai Lin brings sausage, that's a grain and a meat. Why don't I bring something from dairy products... like Gouda."

"Like WHAT?" said the other members of CLUB 4.

"Gouda," said Hanna grinning. "It's a Dutch cheese."

"OK, and I guess I should bring something from the fruit and vegetable group," said Chris. "That's hard. Oh, I know, my dad makes a vegetable soup; it's called borscht. It's got beets and cabbage in it. Let's have the party at my house and I'll ask him if he'll make us some soup."

The CLUB 4 members went home to talk to their parents and everyone agreed that this sounded like a good idea. In fact the parents thought it was such a good idea that the phones started ringing.

First Chris' mother called Hanna's mother and grandmother. Then Hanna's mother called Mai Lin's father. Then Mai Lin's father called Louis' parents and in no time at all there was a major party in Chris' back yard. Everyone brought something. Mr Melnyk made the borscht and Mrs Melnyk added a dish of perogies. Hanna's mother brought the Gouda cheese and some pumpernickel bread, and her grandmother made some apple butter. Mai Lin brought the Chinese sausage and her father brought a big dish of noodles and vegetables. Louis' mother brought hot bannock and his father brought tortiere, the French Canadian meat pie.

"This is a feast," mumbled Chris

with his mouth full. "What a great way to have a party."

QUESTION: WHAT FOOD GROUPS DID THE PARTY DISHES BELONG TO?

Making Alberta Bannock

This bannock recipe was made by a Cree mother from Slave Lake.

Objective

Students will make and sample a traditional Canadian food.

Materials Needed

Explore Nutritious Alberta books
pencils and paper
an electric frying pan
extension cord if needed
jar ring or large cookie cutter
cutting board
large bowl
serviettes or paper towels
slotted spoon
recipe sheet

Procedure

- 1) Make sure all students have clean hands.
- 2) Organize cooking area so students won't trip over cord to fry pan.
- 3) Follow bannock recipe.
- 4) While waiting for the bannock to cook, students write out the bannock recipe, what food group it comes from, the daily requirement from that food group and what constitutes one serving. Add this sheet to their *Explore Nutritious Alberta* booklets.
- 5) Find and mark Slave Lake on the map.

Follow Up

Class organize an ethnic pot luck lunch for a special event.

Club 4 Follow Up

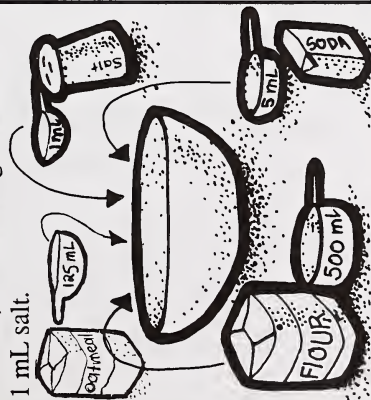
See if you can find out about any other Traditional foods. (i.e. pemmican or beef jerky and the edible berries and wild herbs and vegetables)

Bannock Recipe

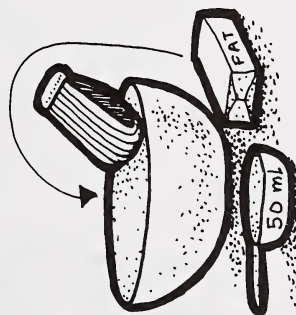
Ingredients:



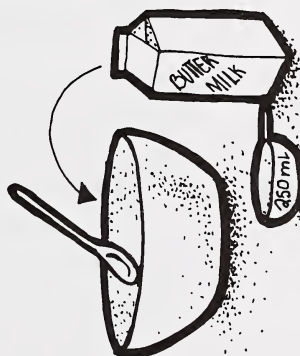
1) Combine 500 mL of enriched flour, 125 mL cornmeal, or oatmeal, 5 mL baking soda and 1 mL salt.



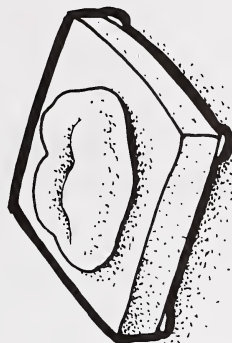
2) Cut in 50 mL margarine, shortening or bacon drippings until mixture resembles small peas.



3) Add 250 mL buttermilk and stir to make dough.



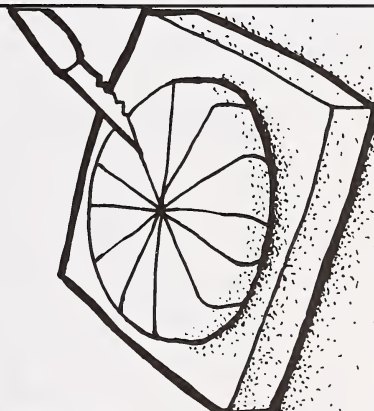
4) Knead slightly on lightly floured board.



5) Roll out to 2.5 cm thickness.



6) Cut dough into 10 to 12 triangles.



7) Heat frypan to 190 deg. C. Sprinkle with flour and dot with margarine. Arrange dough 5 cm apart. Fry 7 min or until underside is lightly browned. Turn and fry another 7 min.



8) Serve hot. Makes 4 to 6 servings.



Parent's Day Out

"Bye Chris, 'bye Grant. Don't forget, our instructions and emergency numbers are on the fridge door. "With a last hug and a slam of the front door, Chris' parents left.

Chris looked at his sitter. Grant looked back.

"Phew," grinned Chris, "I thought they'd never go. Mom hates leaving me for a whole day. Don't know why. I can look after myself you know," and he looked challengingly at Grant.

Grant grinned back and punched him on the arm "I know kid, but look at it this way, you're doing me a favour."

"I am, how?" asked Chris

curiously.

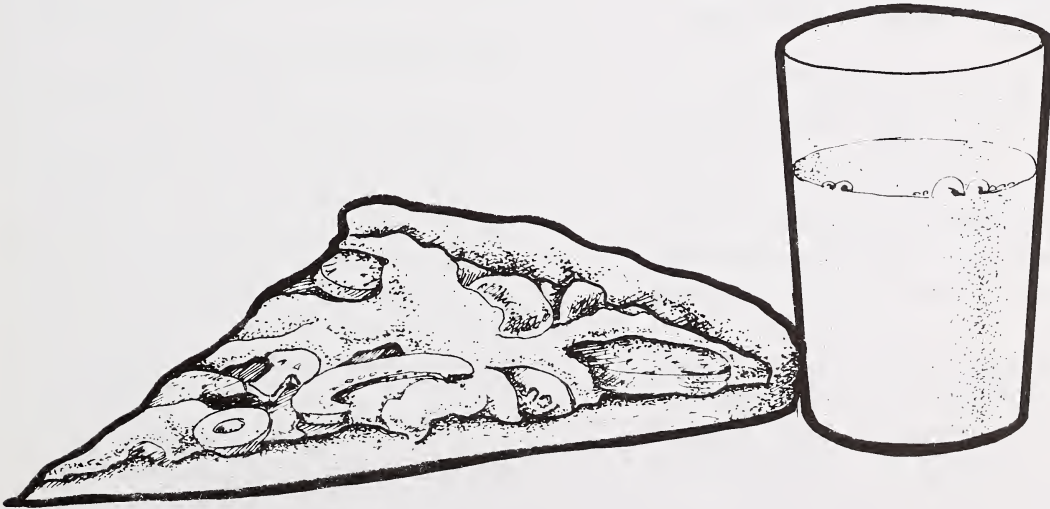
Grant parted his pocket. "I need the bread."

Chris was puzzled. "You can have a sandwich any time."

"No 'bread', 'dough', 'money'," explained Grant, "I'm broke. Thanks to you I'll be able to go out tomorrow. So come on kid. Let's see those instructions on the fridge door."

The note seemed straight forward except for the food. 'Do a CLUB 4 raid in the fridge and cupboard for lunch and supper' said the note.

Grant scratched his head. "Huh," he said, "What's this CLUB 4 raid stuff?"



Chris laughed and explained about the club. "Mom means we can eat anything we like as long as we follow the rules of choosing from the four food groups."

"Oh boy," Grant groaned. "You mean we can't eat pop and potato chips and pizza?" He opened the fridge and peered inside. "I hope there's something here I like."

"Aw, come on Grant, it's no big deal. We can eat almost anything, just not everything from one food group. Look!" Chris pointed to Canada's Food Guide on the fridge door. "We just see what we like and work it out so it's a balanced meal. I'll show you."

Grant looked doubtfully at the Food Guide. "Where does pop and potato chips fit in?"

"They're other foods," explained Chris, "so we can't have them for our main meal, but we could have them as a treat if we had other things too."

Grant wasn't convinced. "What about pizza? I suppose that's an other foods too."

"We can have pizza." Chris checked the top freezer compartment of the fridge. "Yup, there's one here. Pizza is almost a full meal because it has cheese and meat and bread dough and sometimes some vegetables with it. If we had pizza and some salad or fruit juice, that would be alright."

Grant grinned. "OK, you do your thing and I'll do mine. We'll both have pizza. I'll have pop and potato chips with it and you have salad." He held out his hands palm up. "It's a deal, hey?"

Chris grinned back and slapped his hands down on Grant's. "OK, it's a deal."

Lesson Activity

Objective

Students will demonstrate their knowledge of the four food groups by choosing a menu for a day.

Materials Needed

copies of *Canada's Food Guide* for each student.

Explore Nutritious Alberta books
Basic Menu Plan (1 for each

student)

4 *Food Groups Poster* (made in lesson 1)

Procedure

1) Discuss the story. Who made the better choice, Grant or Chris? Why? Could pizza be a good choice? What amounts should be on the pizza to make it a good choice?

2) Give out menu plan pages and *Canada's Food Guide*.

3) Draw a menu plan on board. Using suggestions from students and referring to four Food Group posters, make out a sample menu on board. Use *Canada's Food Guide* to refer to serving sizes. Remind students about Glow, Go and Grow.

4) Discuss snacks and making them COUNT!

5) Using *Canada's Food Guide*, students imagine they are on their own for a day and work out a menu. They can choose their favourite foods and also add a nutritious snack suggestion.

6) Add menu plan and food guide to *Explore Nutritious Alberta* booklets.

Follow Up

Plan to interview family members about how they choose groceries when shopping. Use a Language Arts period to work out the list of questions as a class. Each student takes the questionnaire home.

Club 4 Follow Up

Make your next snack COUNT!
Don't forget to be a label detective.

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Menu Plan

Using your copy of Canada's Food Guide, practice planning a complete menu for one day.

Check that your meals contain foods

from each food group. Check the number of servings you need.

Food Group	Breakfast	Lunch	Supper	Total Servings per Day
Milk Products (3-4 Per Day) Age 10-16				
Meat and Alternatives (2-3 Per Day)				
Grain Products (5-12 Per Day)				
Vegetables and Fruit (5-10 Per Day)				

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I'm Having What For Breakfast?

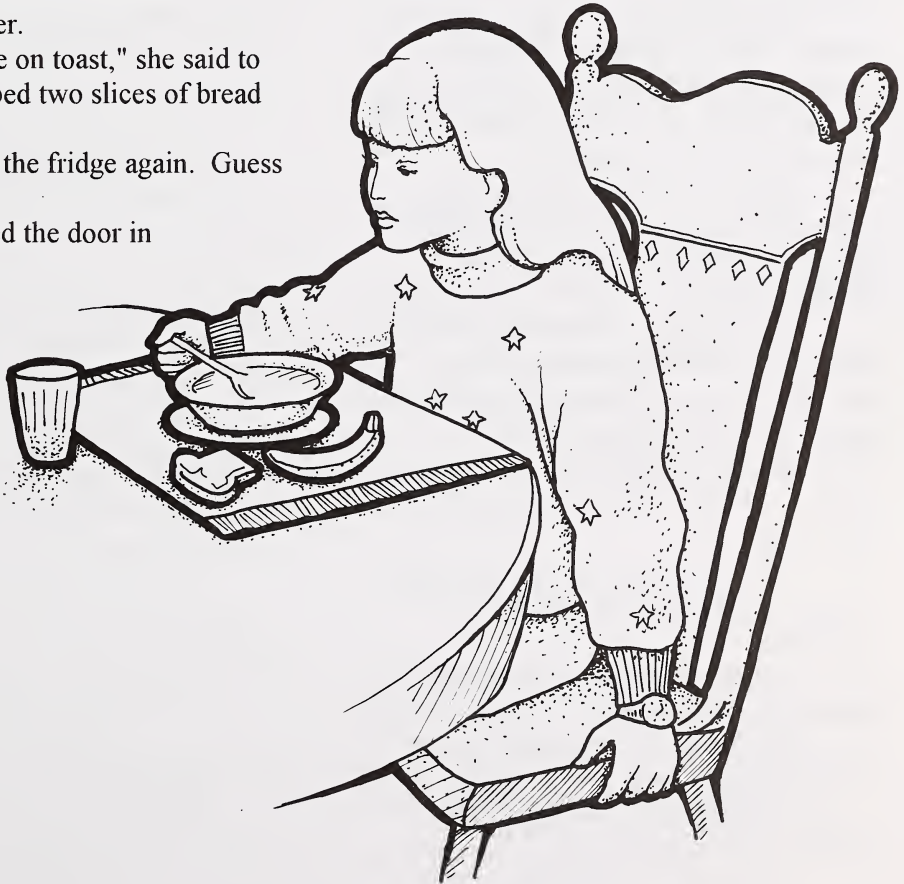
Hanna wasn't in a rush very often. Normally she was very organized, but this morning was different. Some how everything had gone wrong. The zipper on her pants had jammed, her math binder had burst and now she couldn't find anything for breakfast.

"Hmm, a boiled egg," she thought and ran over to the fridge. "I might have known," she groaned as she looked at the empty egg container.

"OK, cheese on toast," she said to herself as she popped two slices of bread in the toaster.

She opened the fridge again. Guess what? No cheese!

She slammed the door in frustration.



"Mom!," she yelled, "there's nothing for breakfast."

Her mother came into the kitchen. "Grandma and I are going shopping this afternoon, but I'm sure we have something. How about a ham sandwich?"

"We used up the ham last night at supper, and there's no eggs left," Hanna pointed out. "Oh Mom, what should I eat, it's getting late."

Her mother walked over to the fridge and looked inside.

"Oops," she said. "This calls for desperate measures."

Hanna's mother thought for a minute. "We need something that is nutritious and quick and easy because you haven't much time. Let's be creative." She walked over to the cupboard.

Hanna's mother lifted out a few cans and peered into the back of the cupboard. Then she gave a crow of delight.

"OK Hanna, you're saved from starvation." Then she paused. "But remember, it's fine to have anything for breakfast if it's nutritious, right?"

Hanna looked suspiciously at her mother. "What is it that you've found?" she asked.

"It's very nutritious, and quick to prepare, and easy to eat," her mother continued.

"Mom! What is it?" squeaked Hanna in frustration.

Her mother opened a drawer and took out a can opener.

"A can of pea soup," she said briskly as she poured it into a saucepan.

Hanna burst out laughing. "Pea soup! For breakfast!"

"Why not," replied her mother. "Add your toast, a banana and a glass of

milk and you have a good balanced meal."

Hanna was laughing so hard she had difficulty eating the soup. "Wait 'till I tell CLUB 4 about this," she crowed. "I can just imagine what Louis will say!"

Hanna's mother waved at the door as Hanna climbed into the school bus that morning.

Suddenly a shriek was heard from inside the bus. "You had WHAT for breakfast?"

"I guess Hanna told Louis," thought her mother as she closed the door.

The Creative Breakfast Competition

Objective

Students creatively apply their nutritional knowledge to create unusual breakfast menus.

Materials Needed

4 *Food Groups Poster* (made in lesson 1)
white placemat sized sheets of art paper
art supplies
certificates
lined paper and pencils
copies of *Instant Breakfast* recipe

Procedure

1) Ask what food groups Hanna had for breakfast. Review food groups and serving sizes. (250 mL pea soup and milk, a slice toast, a medium banana).

2) Explain what 'breakfast' means (breaking the overnight 'fast') and discuss the reasons we need a good breakfast (energy for day so GO food important. Look good with sparkling eyes and healthy skin, so GLOW foods important, bodies constantly repair tissues and bones even though sleeping, so important to recharge with GROW foods.)

3) Write the following words on the board - 4 food groups, colour, shape, imagination, presentation. Explain this is the check list for the CREATIVE BREAKFAST COMPETITION.

4) Students think of a creative and unusual breakfast that fits all the requirements.

5) Using the 'placemats' and art supplies, the students draw or paint their breakfast full size and in full colour as though it was on the table before them.

6) Using lined paper, students write a paragraph about their unusual breakfast, what they chose, why, and the serving sizes for each item. (refer students to *Canada's Food Guide* in their *Explore Nutritious Alberta* books for guidance).

7) Pin 'placemats' and accompanying descriptions around the room.

Follow Up

Class judge which is the most creative and nutritious breakfast (giving ribbons is optional).

Give all participants a Creative Breakfast certificate.

Give everyone the recipe of *Instant Breakfast* to add to their *Explore Nutritious Alberta* booklet.

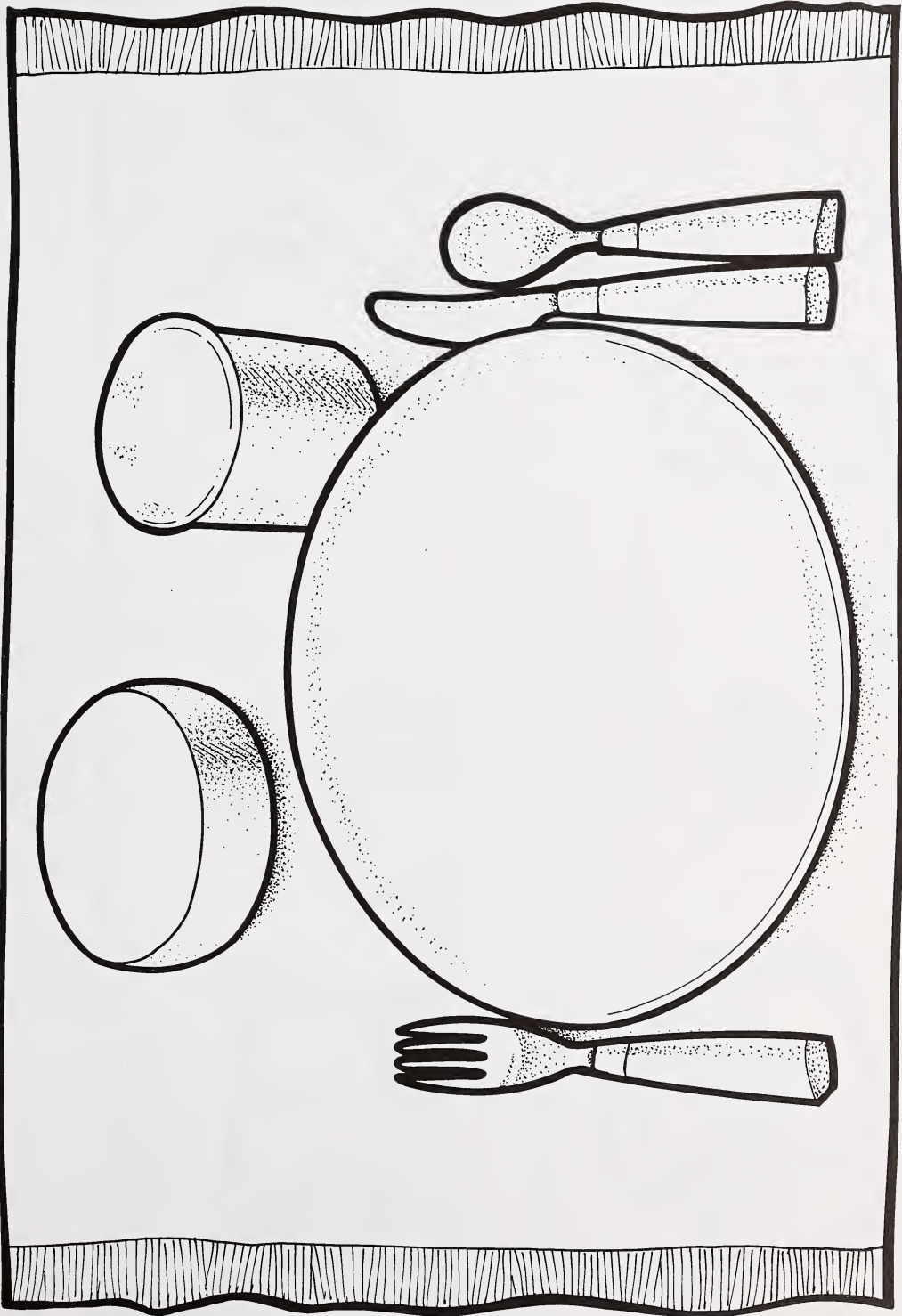
Club 4 Follow Up

Try the *Instant Breakfast* recipe.

TEACHER'S NOTE: This lesson concludes the booklet activities. EITHER Display the finished booklets around a map of Alberta. Show the places visited by red pins or by pinning up the photos and running a red string from them to the town. OR

Allow student to take the booklets home.

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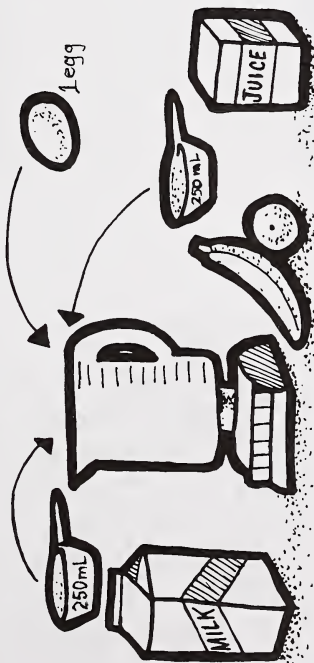


Instant Breakfast

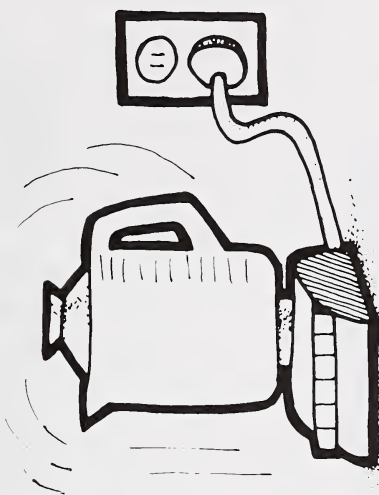
Ingredients:



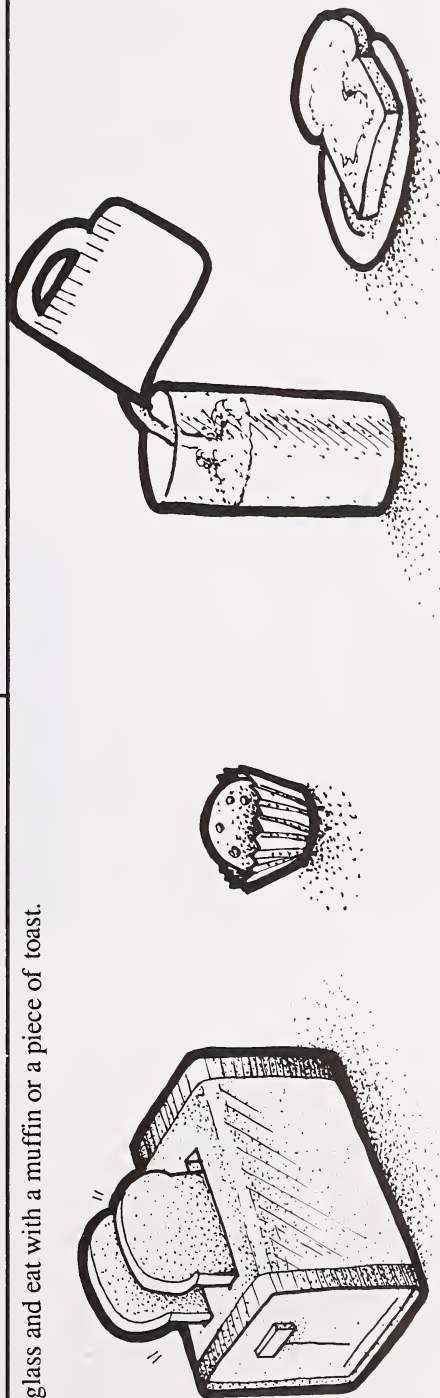
1) Add 250 mL of milk, 250 mL of fruit or juice and one egg together in a blender.



2) Blend well.



3) Put in glass and eat with a muffin or a piece of toast.



Handwritten text, possibly a title or list, located on the right side of the page.





This is to certify that

**created a nutritious
breakfast!**

DATE

TEACHER'S SIGNATURE



This is to certify that

no further & further
has been

2000

2000

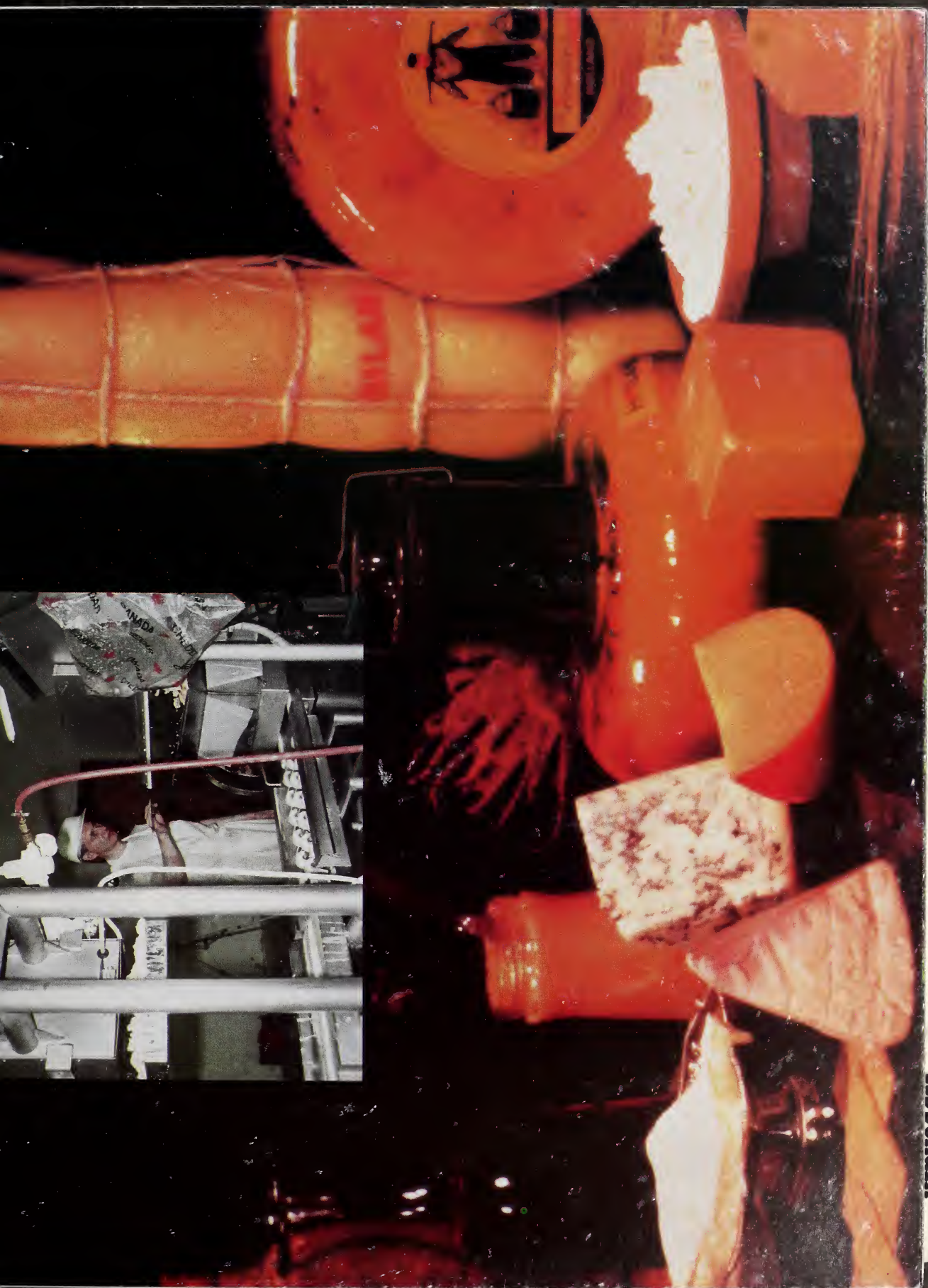


Grade 4

Grade 5

Grade 6

Appendix







Grade 4

Grade 5

Grade 6

Appendix





Explore Nutritious Alberta

Grade 4

About Explore Nutritious Alberta

FURTHER ADVENTURES OF CLUB 4 is a unit designed to present teachers and elementary students in grades 4-6 with an easy, entertaining and informative package of nutrition information.

The information is presented through the eyes of CLUB 4, a fictional group of four elementary school friends who are interested in nutrition. The friends are from a variety of social/economic backgrounds and the situations portrayed are chosen to reflect the diversity of social/economic backgrounds found in Alberta.

The unit is divided into three grades. In grade four, the theme is **Knights of the Kitchen Table**; grade five students become **Shoppers' Apprentices** and in grade six the theme is **Passport to Nutrition**. Each of these themes is correlated to other subjects in the elementary curriculum.

Each grade has ten lessons. Each lesson contains a story about CLUB 4, a related lesson activity, and a follow up suggestion for the students. The story and the lesson can be done together to fill one period, or can be used on separate days. A teacher wishing to have one lesson a week for 30 weeks can use each story, lesson and the follow up suggestion as a basis for three separate lessons.

The stories and lesson activities relate to the nutrition topics in the **Alberta Elementary Health Curriculum**. The broad topic is mentioned before the story and the specific curriculum topic is mentioned at the beginning of the lesson activity. Many of the follow up

suggestions relate to other subjects such as Physical Education, Social Studies, Language Arts, Math and Art.

As a teacher, not a nutritionist, you may sometimes be asked difficult questions. We suggest that reading ALL THREE grades before teaching your grade may clarify some points. Also make yourself familiar with the booklet **Nutrition: The Ins and Outs**, and the other resources enclosed in the binder.

Your enthusiasm for nutrition is contagious, and so is a feeling of adventure. CLUB 4 will work best if you use these positive feelings to create an atmosphere of curiosity and a willingness to try different foods. Your role model as a teacher is vital, so it is important to eat and drink wise food choices in front of the students.

How To Make Best Use Of Club 4

1) Tantalize your classes' curiosity. Pin up the poster a few days before starting the unit. Add a heading 'What's CLUB 4?' or 'Do you belong to CLUB 4?' Make veiled references to it in other lessons.

2) The day of the first lesson introduce the CLUB 4 members on the poster using the following information:

CLUB 4 - Four friends in a small Alberta town who form a club to explore their interest in nutrition.

CHRIS MELNYK - Helps his mother with the new baby (Kim). Father is a truck driver. Chris likes to spend time on his uncle's farm.

MAI LIN LEE - Lives with her father and elder sister Cho San. Father is the manager at the supermarket and a great cook. He has taught the two girls to speak Chinese.

LOUIS DUMONT - Father works on an oil rig and is often away from home. Mother does part-time secretarial work in the town office. Louis speaks English, a bit of French and has picked up some Cree words from his grandmother.

HANNA BOGART - Lives on an acreage on the outskirts of town with her mother, a kindergarten teacher. Hanna has a close relationship with her grandmother who spends a lot of time at their house.

3) Students could consider themselves 'CLUB 4 members' in the broad sense. Encourage this feeling amongst your students. Any child who shows an awareness of sensible eating is a CLUB 4 member. Strengthen this by encouraging the students to do the follow ups at home. Students in grades 5 and 6 may even want to start their own CLUB 4. This could be one as a lunch time activity.

Ways To Use The Stories

(Choose the ones most suited to your grade).

- 1) Read aloud to the class.
- 2) Photocopy the story and give a copy to each student. Read the story aloud while the students follow on their copy or have the students read the stories to themselves. Students could then save the stories and compile them into their own book adding their own illustrations.
- 3) Give selected students a copy of the story and choose different students to take turns reading aloud.
- 4) After reading the stories, pin the week's story up under the poster so it can be re-read at leisure.

Follow Up

An important aspect of teaching nutrition is making it relate to the home. At the end of each lesson encourage the students to be CLUB 4 members by doing the follow up. The home follow up is voluntary but should be encouraged in one of the following ways:

1) Explain the task verbally at the end of the lesson.

2) Write the task on the board so students can copy it down.

Encourage home involvement in as many ways as possible by using parent volunteers for field trips, cooking demonstrations, ethnic potluck lunches or suppers. After the parents have helped, make them an honorary member of CLUB 4!

Nail Soup

Curriculum Topic

The four food groups

TEACHER'S NOTE: Pin up the *Club 4 poster* before reading the first story. Explain who the children are and how they started CLUB 4 - refer to the information in the introduction.

Hanna was bored. It was almost the end of the summer holidays and all her friends were away. She had already been for a swim, ridden her bike around the block and read a book. Now there was nothing to do.

"Hanna, can you help me?" came a call. Hanna swung around and saw her grandmother trying to drag a heavy sack over the ground. She ran over and lifted one end.

"What's in this, Grandma?" asked Hanna.

"Beans," replied her grandmother. "I bought them from a farmer so we could freeze them to see us through the winter. Would you like to help me top and tail them?"

"Sure," said Hanna. "Besides, there is nothing else to do." So together they sat under the shade of a tree and carefully topped and tailed the beans.

"What about that club of yours?" asked Grandma. "That nutrition club you and your friends started. Can't you think of something to do for that?"

Hanna shrugged. "I don't even know if everyone will want to do it this year."

Suddenly the yard was full of running feet, shrieks and yells as three excited children burst through the gate.

"It's Chris, Mai Lin and Louis! They're back!" yelled Hanna as she jumped to her feet spilling beans in every direction.

The four friends hugged and pounded each other on the back and talked excitedly.

One by one they settled down on the grass by Hanna's grandma and one by one as they talked about their holidays, they started to help Hanna with the beans.

"All this help soon made short work of the beans," said Grandmother.

Everyone looked up in surprise. Grandma laughed and showed them the empty sack. "Many hands make light work," she quoted, "so in return, how would you all like to stay for supper? It's nail soup so we can make enough to go round."

"Nail Soup! YUK!" exclaimed Louis. "It sounds awful."

"It's not," laughed Hanna. "It just means a soup you can add everything to. It's named after an old story Grandma knows."

"A story?" exclaimed Mai Lin. "Please tell it to us, Grandma Bogart."

Grandma Bogart smiled and sat down again.

"Once upon a time there was a knight on a quest. He was travelling through a country he did not know and was cold and hungry. Ahead of him he saw a small farmhouse and so he knocked on the door and asked the owner if he

could spare him some food.

'I'm sorry,' replied the farmer, 'but I am just a poor man and have only enough food for myself.'

'In that case,' said the knight, 'could I boil a pot of water on your stove?' The farmer agreed.

The knight took a small cooking pot, filled it with water and placed it on the farmer's stove. Next he took a long nail from his pack, dropped it in the water and stirred it.

'What are you doing?' asked the farmer curiously.

'Making nail soup,' replied the knight, 'but it's a pity I don't have a little onion for it.'

'Oh, I have a small onion,' offered the farmer. 'Would you like it?'

'Yes please,' replied the knight, and

he chopped the onion and dropped it in the pot.

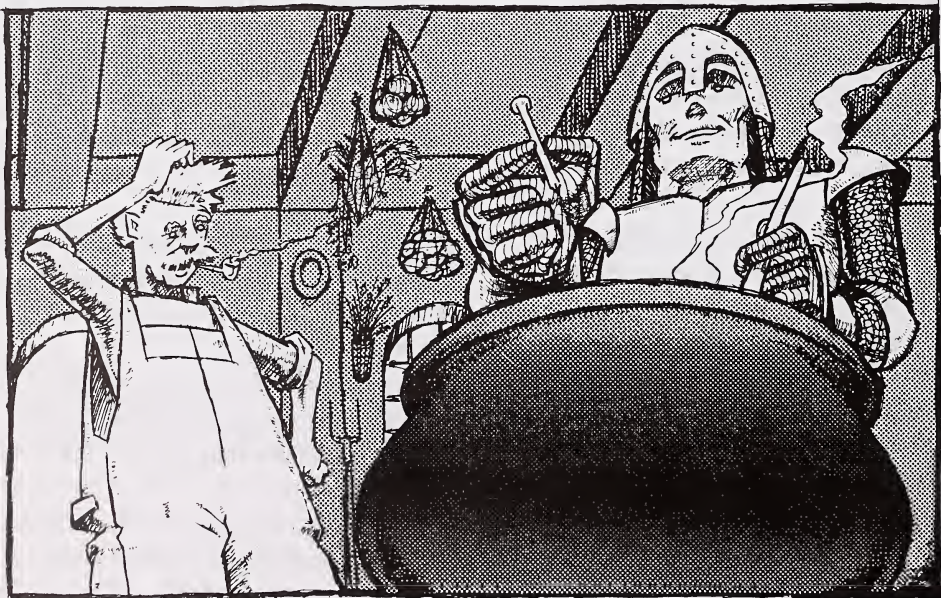
Soon the smell of the cooking onion filled the little house.

'Hmm,' said the knight as he stirred the pot. 'This is good nail soup. What a pity we don't have a few carrots for it.'

'Oh, I have a few old carrots,' said the farmer. So they were chopped up and added to the pot.

The knight stirred the pot again. 'Hmm,' he said thoughtfully, 'this is an excellent batch of nail soup. All it really needs is a hint of chicken.'

'I have some chicken left,' said the farmer and brought half a small chicken to the knight. Together they cut up the meat and added it to the pot. The soup bubbled and stewed and filled the house with a wonderful smell.



'The nail soup is almost ready,' said the knight as he stirred the pot. 'But it's a pity we don't have a few herbs to add to it.'

'Oh, but we do,' said the farmer excitedly, and he cut down some sweet smelling herbs hanging from the rafters.

The knight nodded his thanks and stirred them into the pot. 'Now the soup is ready' he said. He poured out two brimming bowls, fished out the nail, wiped it and carefully placed it back in his pack.

The two men ate the soup, then the knight set off again on his travels. The farmer watched him go and shook his head in wonder.

'What a delicious soup,' said the farmer. 'And all it was made of was one nail!'"

Grandma Bogart got up and stretched. "How would you like to collect your favourite vegetables from the garden and we'll add them to my version of nail soup?" she asked.

"Great," said Chris. "This can be the first Club 4 project of the year, learning how to make nail soup."

Louis grinned. "We can all be knights," he called as he jumped on an imaginary horse and galloped around the yard.

"That's it," said Mai Lin excitedly. "That's what we can be for Club 4 Knights of the Round Table."

"Knights of the Kitchen Table, you mean," giggled Hanna.

And that is just what they were.

Lesson Activity

Curriculum Topic

Classifying food into the four food groups.

Objectives

1) Students will be able to classify foods according to the four food groups.

2) Students will be able to identify foods produced in Alberta.

3) Students will be introduced to the concept of being Knights of the Kitchen Table.

Materials Needed

the *4 Food Groups Poster* (to be made)

student copies of *Map of Foods Grown or Processed in Alberta*

transparency of map (make this on the Thermafax prior to the lesson)

overhead projector

felt pens for teacher

crayons for students

student copies of *Knights of the Kitchen Table Shield*

1 poster board

Procedure

1) Have the students make a *4 Food Groups Poster* from magazine pictures that have been cut out and placed in four sections on the poster board. This should be done in the shape of a rainbow to follow Canada's Food Guide.

2) Tell students that they are all going to work to become Knights of the Kitchen Table and that each week they will be given a task that will help them

attain their knighthood in a ceremony at the end of the unit. The first task is to discover what foods from the four food groups are produced in their area.

3) Write the names of the four food groups on the board and review the class knowledge of which foods fall into the different categories. Encourage students to include examples of alternatives. Check the lists with the *4 Food Groups Poster*.

4) Draw a separate box in the corner of the board and in it place the name of any other foods mentioned. Save this information for the next lesson.

5) Using the overhead projector and prepared transparency, look at the map of Alberta.

6) Decide on a colour code for the food group legend and colour it with the felt tip pens.

7) Allow the students at least five minutes to go through their own copy of the map and using the colour code, colour each food symbol according to its food group.

8) Check their answers by having volunteers colour code the transparency.

9) Have students find their home town on the map (or teacher insert where it would be on the overhead) and look to see what foods are produced in their area. Add any you know of that are not shown on the map.

10) When the maps are completed, give out the knights' shields and have each student fill in the first segment. (See instructions on the shield page.)

11) Collect the shields and save them. They will be used with each lesson.

Follow Up

Make your own version of Nail Soup.

1) Each student should choose something to bring to school to add to the Nail Soup, for example: carrot, onion, stick of celery, 1/2 green pepper, wedge of cabbage, half a turnip, some fresh parsley, pieces of cooked lean meat, piece of cooked skinless chicken, some peas or beans (not dried), cooked rice, pasta.

Have the students chop their food at home, if necessary, ready for addition to the soup.

2) According to the class size start with one or two packets of dried instant oriental noodle soup (or dried bouillon soup base) instead of a nail!!!

3) In large pot, prepare noodles and soup base according to instructions on the package.

4) Add the students' contributions.

5) Stir for a couple of minutes until heated through and serve.

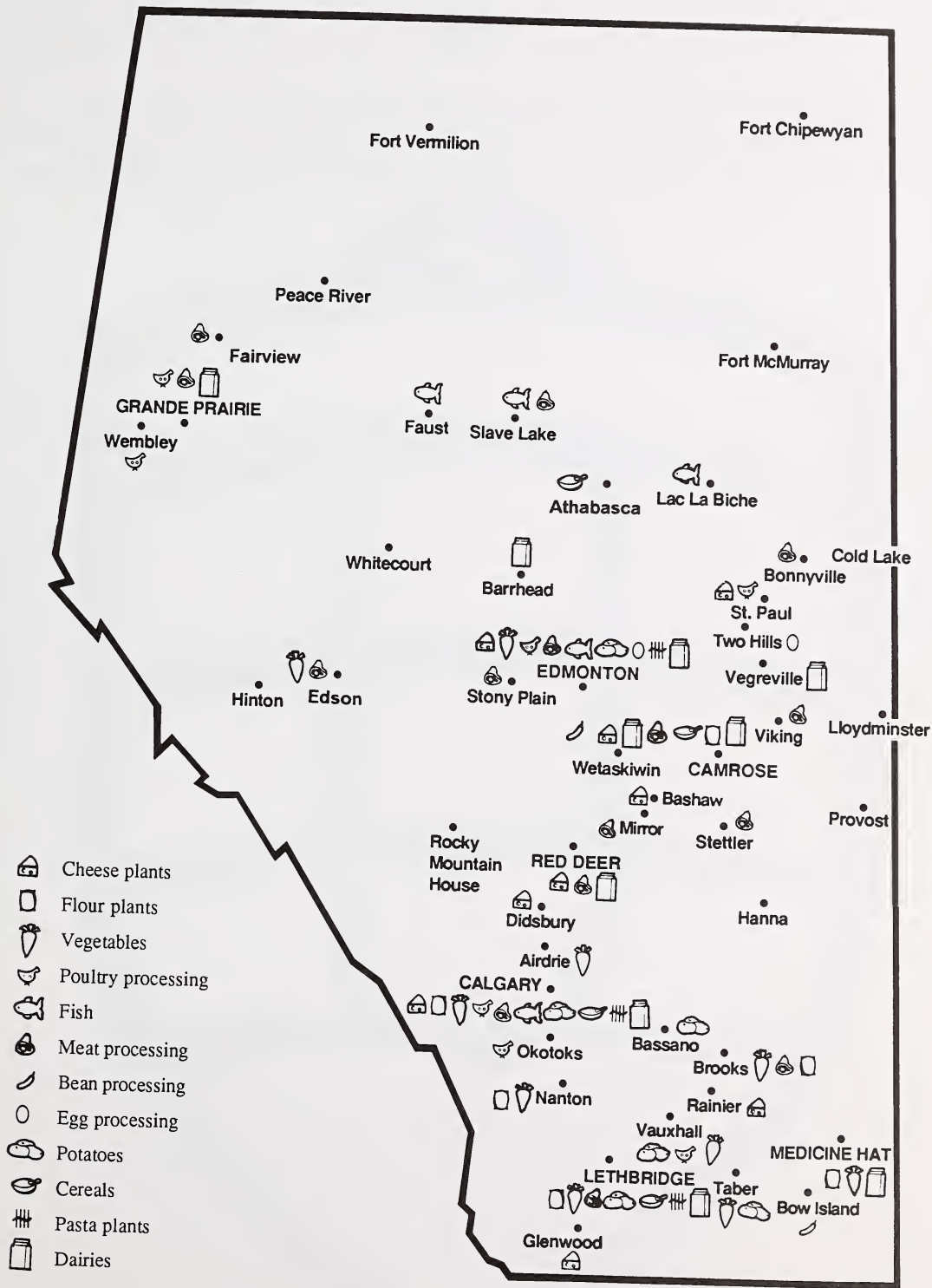
6) While eating discuss how many food groups are in the soup; eg. noodles are grain products. Vegetables? Any slices of meat? What group is missing? What could make this a balanced meal? (Drinking a glass of milk or grating some cheese on top.)

TEACHER'S NOTE: If it is not possible to make this recipe in the classroom, do one of the following:

a) Give out the recipe and encourage the students to try it at home.

b) Ask the students to create their own 'nail soup' recipe.

Map of Foods Grown or Processed in Alberta

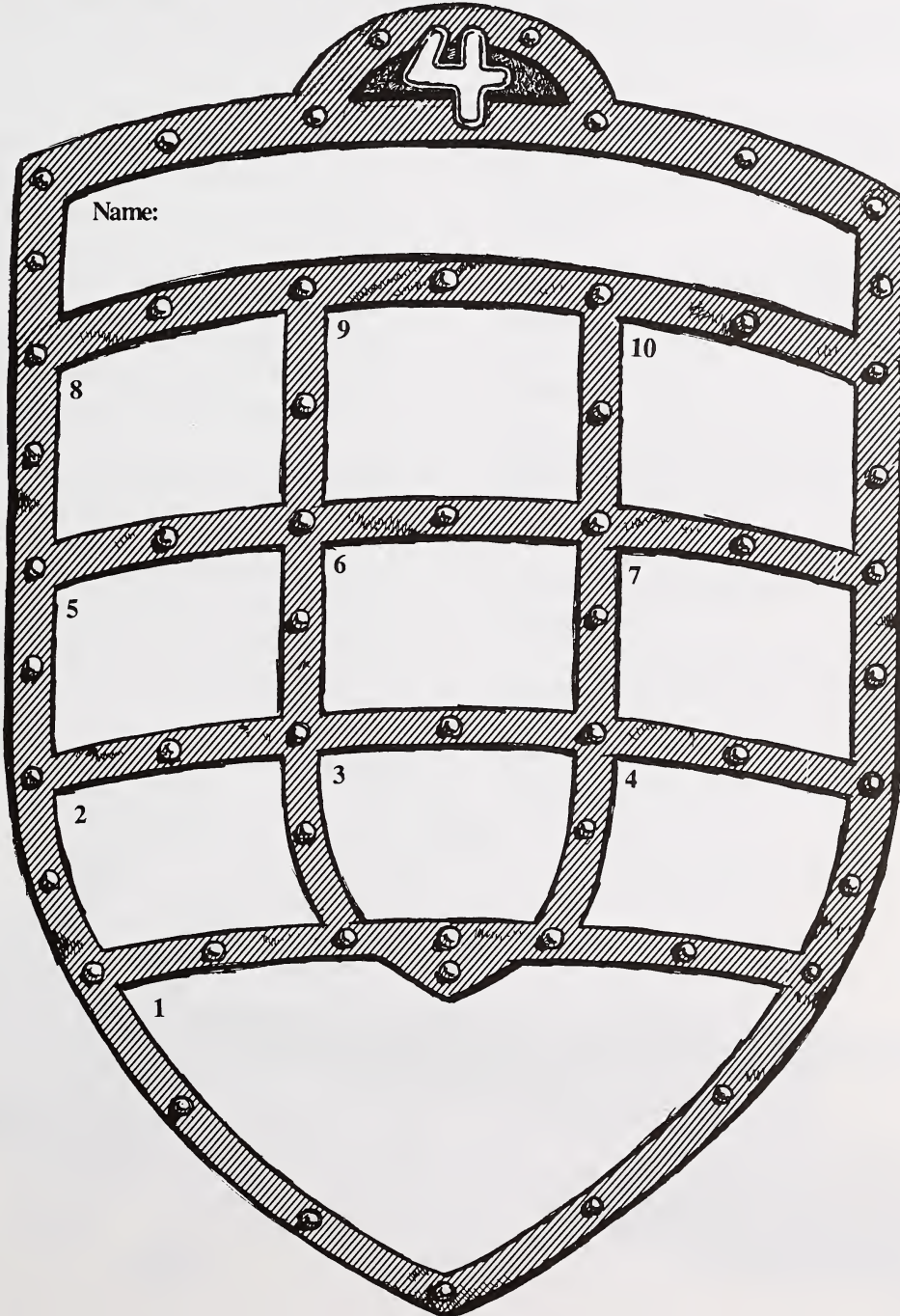


LESSON 1

Knights of the Kitchen Table Shield

Name _____ Date _____

Instructions: A knight's shield is made up of many emblems or symbols. Look at the instructions on the back of this page and at the end of each lesson create a symbol in the space provided. At the end of the unit your shield will be complete. Cut it out and wear it.



Segment 1: Using fancy writing, print the name of your home town and draw a picture of an Alberta food produced near it

Segment 2: Draw one of the chosen nutritious foods

Segment 3: Draw a hamburger

Segment 4: Copy your favourite nutrient cartoon

Segment 5: Draw a glass of milk

Segment 6: Draw your muffin

Segment 7: Draw a nutritious snack

Segment 8: Draw YOU doing your favourite activity

Segment 9: Create a symbol that depicts the digestive tract

Segment 10: Draw a tooth and tooth brush

As Smart as a Cave Dweller

Curriculum Topic

Nutritious foods and other foods

Louis was having an amazing dream. He was on his hands and knees, sometimes on his belly, edging silently from his cave home, to the underbrush of a riverbank. He wasn't cold, although he was wearing only a few skins and he was concentrating on moving so absolutely silently that the scratches from the twigs and branches did not hurt him.

Gently he moved the branches in front of his face and peered through the gap. On a sand bar, just below the river bank, three deer were drinking at the water's edge.

"FOOD" thought Louis. "Enough food to feed the whole cave clan." And he raised his arm and tightly clutched his spear with the carefully made flint point. He took aim, but just as he was about to hurl the spear towards the deer, the river bank beneath his knees gave way and he

tumbled head over heels down... down... down...

And landed with a thump on his bedroom floor.

His mother poked her head round the door. "I'm glad you're awake Louis," she said cheerfully, "It's time for breakfast."

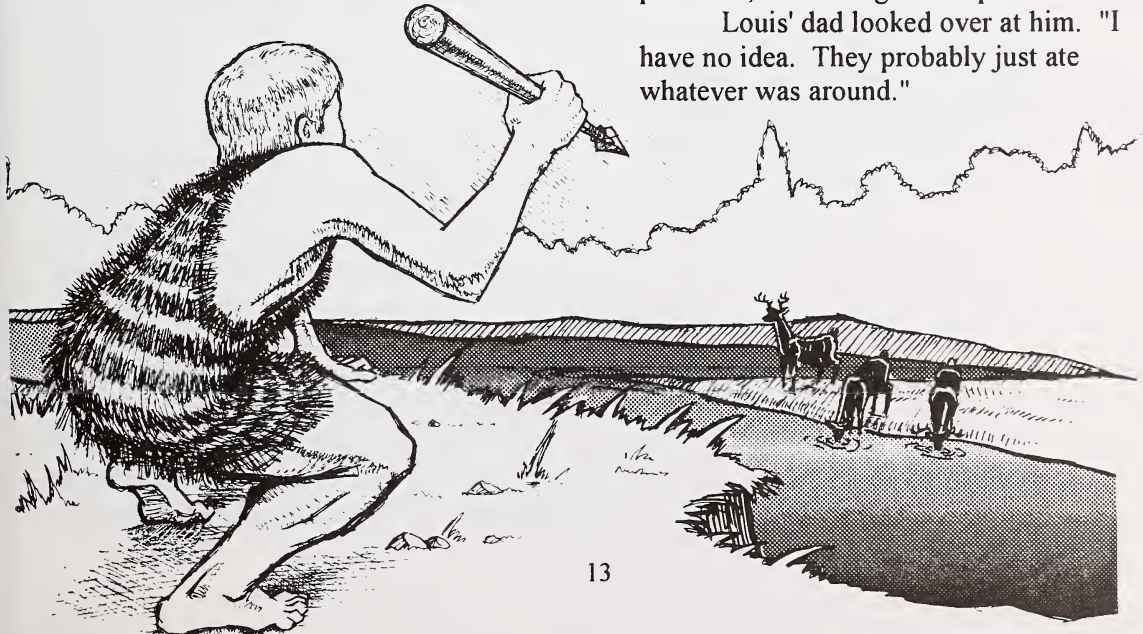
Louis shook his head groggily and tried to disentangle himself from the bedding. "Breakfast," he thought. "Do cave dwellers eat breakfast? Besides, I missed the deer!"

Digging into a plate of scrambled eggs he looked up at his parents. "Hey Dad," he asked, "what did cave dwellers eat for breakfast?"

"I don't know. What DID cave dwellers eat for breakfast?" replied his dad automatically.

"I'm not telling a joke," Louis protested, "I'm asking a real question."

Louis' dad looked over at him. "I have no idea. They probably just ate whatever was around."



Louis thought about it. "Yes, but what did they eat other than meat?"

"I'm not too sure that cave dwellers ate all that much meat," explained Louis' dad. "They must have dreamed constantly about a big kill, but it was hard work to catch the really large animals and it happened only occasionally. Cave dwellers probably ate a lot of small animals like rabbits though, and lots of wild berries, roots and what we call salad greens. But the hope of killing the large animals and having enough meat to last them for a long time must have been very strong. Look at all the cave paintings they did of animals."

Louis thought about it. "You mean that meat was their favourite thing, and that's why they painted pictures of themselves hunting the animals?"

"Something like that," agreed Louis' dad.

Louis giggled. "Oh boy, if we painted our favourite things on the wall it would probably be chocolate, not meat."

"Ah, but cave dwellers were probably more fit," pointed out Mr Dumont. "They only ate food from the four food groups and absolutely NO other foods."

"I never thought of that," said Louis. "I guess cave dwellers were pretty smart." He grabbed a piece of toast that popped up from the toaster and took a big bite. "But I'm glad I live now."

Lesson Activity

Curriculum Topic

Identifying nutritious food and other foods

Objectives

- 1) Students will identify nutritious food.
- 2) Students will identify food classified as other foods.

Materials Needed

booklet - *Nutrition: The Ins and Outs*
overhead transparency of cave paintings
large roll of newsprint
paints, brushes, water jars etc.
overhead projector
student copies of *Knights of the Kitchen Table Shield*

Procedure

1) Discuss the Other Food category and why cave dwellers didn't eat these foods. (See page 5 of *Nutrition: The Ins and Outs*.)

2) Ask the class to think about the following statement. "We think of cave dwellers as people who lived long ago. Review the story and classify the foods mentioned into the food groups. Are any food groups missing?"

3) Using the board, list everything the class has eaten and drunk in the last 24 hours. Classify under headings of the four food groups, combination foods (eg. cheese and tomato pizza and BLT hamburger) and other foods. (Use booklet

for reference if needed.)

4) Add to the list any other foods left on the board from the previous lesson.

5) Place the cave painting transparency on the overhead projector and discuss it with the class. As Knights of the Kitchen Table they are being asked to do the equivalent of a cave painting. They must first decide which modern foods are very important to them, and then paint them on a wall mural so future generations will know which foods were good and nutritious in the late twentieth century. (NO other foods will be allowed.)

6) Divide students into small groups (no more than six people) and have each group work on the mural. (This may take longer than one lesson so consider integrating with an art lesson if necessary.)

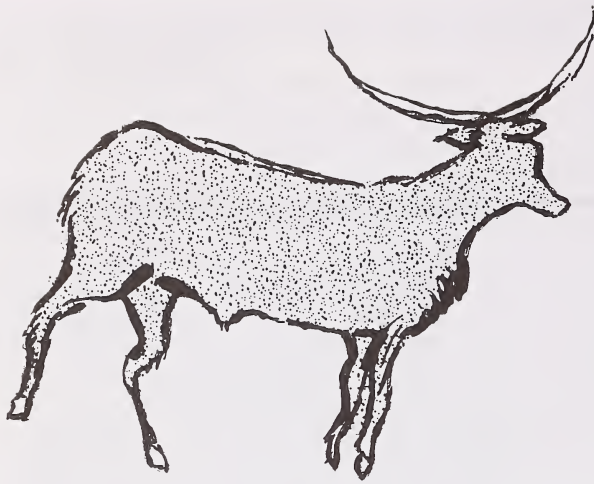
7) Display the finished murals.

Follow Up

1) Give students their *Knights of the Kitchen Table Shield*. Have students draw one of the chosen nutritious foods in the second segment.

2) Collect the shields.

Cave Paintings



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LESSON 3

The Biggest Hamburger in the World

Curriculum Topic

Combination foods

Brring, brring, brring!

Mai Lin picked up the phone eagerly. "Oh hi, Chris. Yes, I can be ready in ten minutes. Where are we going? What! To a place that sells the biggest hamburgers in the world! I don't believe it but I'll come and see," and she hung up laughing and went to get her coat.

Mai Lin didn't have to wait long. She knew the car had arrived before Chris' mom, Mrs Melnyk, tooted the horn. She could hear Louis, Chris and Hanna singing at the top of their voices.

"OK," said Mai Lin as she climbed into the back seat, "so how big are the biggest hamburgers in the world?"

"They're pretty big," replied Mrs Melnyk. "In fact, if you put everything on them will probably be too much for you to eat."

"It's this new place," Chris explained. "You buy a plain hamburger, but it's a big one, then you load it up with all this stuff."



"What's so different about that?" objected Mai Lin. "We always put on our own ketchup and stuff."

"No, it's not just ketchup," replied Mrs Melnyk as she swung into a parking lot. "You'll see."

Everyone trooped inside and lined up at the food bar for their hamburgers.

"This doesn't look too much different from where we usually go," whispered Mai Lin to Hanna.

"Wait until you get around the corner," said Hanna.

Mai Lin looked at her hamburger. It was a big one, but certainly not the biggest in the world. She looked to see where the others were going. Carrying her plate carefully she followed them around the service counter.

"OH BOY!" she gasped.

There in front of her was a long counter loaded with bowls. There was lettuce, onions, relish, mustard and ketchup, but that was just to start with. There were all kinds of other ingredients - sliced cucumber, mushrooms, cheese, green pepper, sauerkraut, chili, beets, beans and lots of stuff that Mai Lin didn't even recognize.

"You put all that on one hamburger?" she gasped.

"Only if you want to," explained Mrs Melnyk. "Open the hamburger and add your favourite things, just like the posters say," as she pointed to some signs above their heads.

"Make your hamburger a good food experience," Mai Lin read. "A well loaded hamburger contains protein, carbohydrates, vitamins and minerals. Take your pick."

"Proteins, carbohydrates, vitamins and minerals," repeated Hanna. "What are those?"

"That's why I brought you here," said Mrs Melnyk. "I thought it was time the Knights of the Kitchen Table learned the scientific names for GROW, GO and GLOW foods."

"Right on," agreed Louis and he spooned chili over his hamburger and added several slices of cucumber and onion. "My hamburger's nutritious. It's got bread - that's a GO food. It's got GROW foods 'cause of the patty and the beans in the chili, and it's got GLOW foods with the cucumber and onion."

"That's a great hamburger, Louis," agreed Mrs Melnyk. "Now bread provides mostly carbohydrates, meat and alternatives provide proteins and minerals, and your vegetable choices provide vitamins. There is only one problem."

Louis looked at her. His hands were trying to grasp the burger without squeezing anything out. "There is?" he asked.

"Yes," laughed Mrs Melnyk. "How are you going to get that in your mouth?"

The CLUB 4 kids looked at their hamburgers. The smallest was 12 centimetres high.

"This is going to be good but messy," agreed Mai Lin. "But Chris was right. These ARE the best hamburgers I've ever seen, and Louis' just might be the biggest in the world." Then she looked at Mrs Melnyk. "But I think you'd better not look at us while we eat them."

So Mrs Melnyk didn't, and neither will we!

Lesson Activity

Curriculum Topic

Classifying "combination foods" into the four food groups.

Objectives

- 1) Students will learn to identify components of combination foods.
- 2) Students will learn scientific names for GROW, GLOW and GO foods.
- 3) Students will try a simple chemical test to identify nutrients in food.

TEACHER'S NOTE: This lesson needs some preparation. Set up these experiments in three work centres. (See Experiment Instruction Sheet.) The two experiments using the bunsen burner are demonstrated by the teacher at one work centre. The other experiments the students can handle on their own with instructions. The class is divided into four groups, one for each work centre. The children waiting to do the experiments can quiz each other on the *Functions of Food Groups* fact sheet. You may like to ask for two parent volunteers to man the other work centres.

Materials Needed

- student copies of *Functions of Food Groups* fact sheet
- student copies of *Experiment Instruction Sheet*
- student copies of *The Great Hamburger Experiment* record
- student copies of *A-maze-ing Foods* worksheet
- student copies of *Knights of the Kitchen Table Shield*
- two hamburgers with lettuce and cheese (without sauce or relish) divided into four to provide one piece for each

experiment

equipment for experiments - see *Experiment Instruction Sheet*

Procedure

1) Explain how the students are going to try or observe four experiments to prove that proteins, carbohydrates in the form of starch, fat and minerals are present in hamburgers.

2) On the board, write the nutrients' names **Protein, Fats, Carbohydrates, and Minerals** in one column; and the functions **GROW, GLOW, and GO** in another. Draw lines to connect the appropriate nutrients and functions.

3) Give out the *Functions of Food Groups* fact sheet. Look at the explanations for protein, fats, carbohydrate, vitamins, and minerals. Explain that carbohydrates are found in two forms, starches and sugars. For this experiment the students will be testing for carbohydrate in the form of starch.

4) Pass out the *Experiment Instruction Sheet* and the *Great Hamburger Experiment Record* sheet.

5) Have students classify the components of the hamburger. Try the experiments on the *Experiment Instruction Sheet* to see if the students have the right answers.

TEACHER'S NOTE: Each experiment must be done on each separate section of the hamburger i.e. bread, lettuce, meat, cheese.

Follow Up

1) Have the students do the *A-maze-ing Foods* worksheet.

2) Hand out the student copies of the *Knights of the Kitchen Table Shield* and have the students complete the third segment.

3) Collect the shields.

Function	Food Group	Key Nutrients	Function of Nutrients
GROW (Bones and Teeth)	Milk Products	Calcium	<ul style="list-style-type: none"> •Builds strong bones and teeth •Repairs the skeleton
		Protein	<ul style="list-style-type: none"> •Builds and repairs muscle and tissue
		Vitamin A	<ul style="list-style-type: none"> •Helps normal growth and formation of bones and teeth •Maintains normal eyesight •Helps keep skin healthy
		Riboflavin (B2)	<ul style="list-style-type: none"> •Helps in normal growth and development •Helps the body use energy •Helps keep skin healthy
GROW (Muscle and tissue)	Meat and Alternatives	Protein	<ul style="list-style-type: none"> •Builds and repairs muscle and tissue
		Iron	<ul style="list-style-type: none"> •Helps build and maintain blood •Helps blood transport oxygen and carbon dioxide
		Riboflavin (B2) Niacin (B3) Thiamin (B1)	<ul style="list-style-type: none"> •Help in normal growth and development •Help the body use energy from food •Help maintain a good appetite
GO	Grain Products	Carbohydrate	<ul style="list-style-type: none"> •Main source of energy
		Iron	<ul style="list-style-type: none"> •Helps build and maintain blood •Helps blood transport oxygen and carbon dioxide
		Thiamin (B1)	<ul style="list-style-type: none"> •Helps release food energy from carbohydrates and transports it to body cells during metabolism
		Riboflavin (B2)	<ul style="list-style-type: none"> •Helps get energy into the body •Helps the nervous system to work normally
		Niacin (B3)	<ul style="list-style-type: none"> •Helps the nervous system to work normally •Helps keep digestion normal
GLOW	Vegetables and Fruit	Vitamin A	<ul style="list-style-type: none"> •Helps keep eyesight healthy •Keeps skin and body lining layers healthy to help resist infection
		Vitamin C (ascorbic acid)	<ul style="list-style-type: none"> •Helps “glue” body cells together •Keeps teeth and gums healthy •Helps keep blood vessel walls strong

Adapted from a chart prepared by the Ontario Milk Marketing Board

Experiment Instruction Sheet

PROTEIN EXPERIMENT

EQUIPMENT NEEDED: Asbestos pad, foil container, matches, bunsen burner and trivet, tongs

PROCEDURE: Place a portion of each ingredient in the foil pan and heat it over the bunsen flame. A protein will give off a very pungent smell. Which ingredients smell the strongest?

MINERALS EXPERIMENT

EQUIPMENT NEEDED: Asbestos pad, squares of foil, tongs, bunsen burner and trivet, matches

PROCEDURE: Minerals can be detected by placing a square of foil on the bunsen trivet with a portion of the food sample on top, then burning it in the flame. The sample must be heated until smoke is no longer seen. Minerals are present if a greyish ash remains.

REASON: minerals do not burn.

FAT EXPERIMENT

EQUIPMENT NEEDED: Brown paper without wax coating

PROCEDURE: Have the students rub separate portions of the hamburger over the brown paper. Foods that contain fats will leave a translucent grease trace or spot.

CARBOHYDRATE/STARCH EXPERIMENT

EQUIPMENT NEEDED: Iodine, eyedropper, plastic cups, water





PROCEDURE: Dilute iodine with same amount of water. Each student takes a tiny bit of the food samples (approximately 2 mL) and places them in separate plastic cups. Using the eye dropper containing the iodine solution add a drop of iodine to each sample. If the food sample turns blue/purple, starch is present.

LESSON 3

The Great Hamburger Experiment Record

Name _____ Date _____

Instructions: Do the experiments as directed. Use this sheet to enter "present" or "not present" in the appropriate squares.

test	protein test	fat test	mineral test	starch test
bun 				
lettuce 				
patty 				
cheese 				

Observations and Conclusions

Protein is found in

Fat is found in

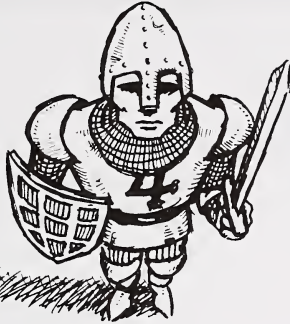
Carbohydrate in the form of starch is found in

Minerals are found in

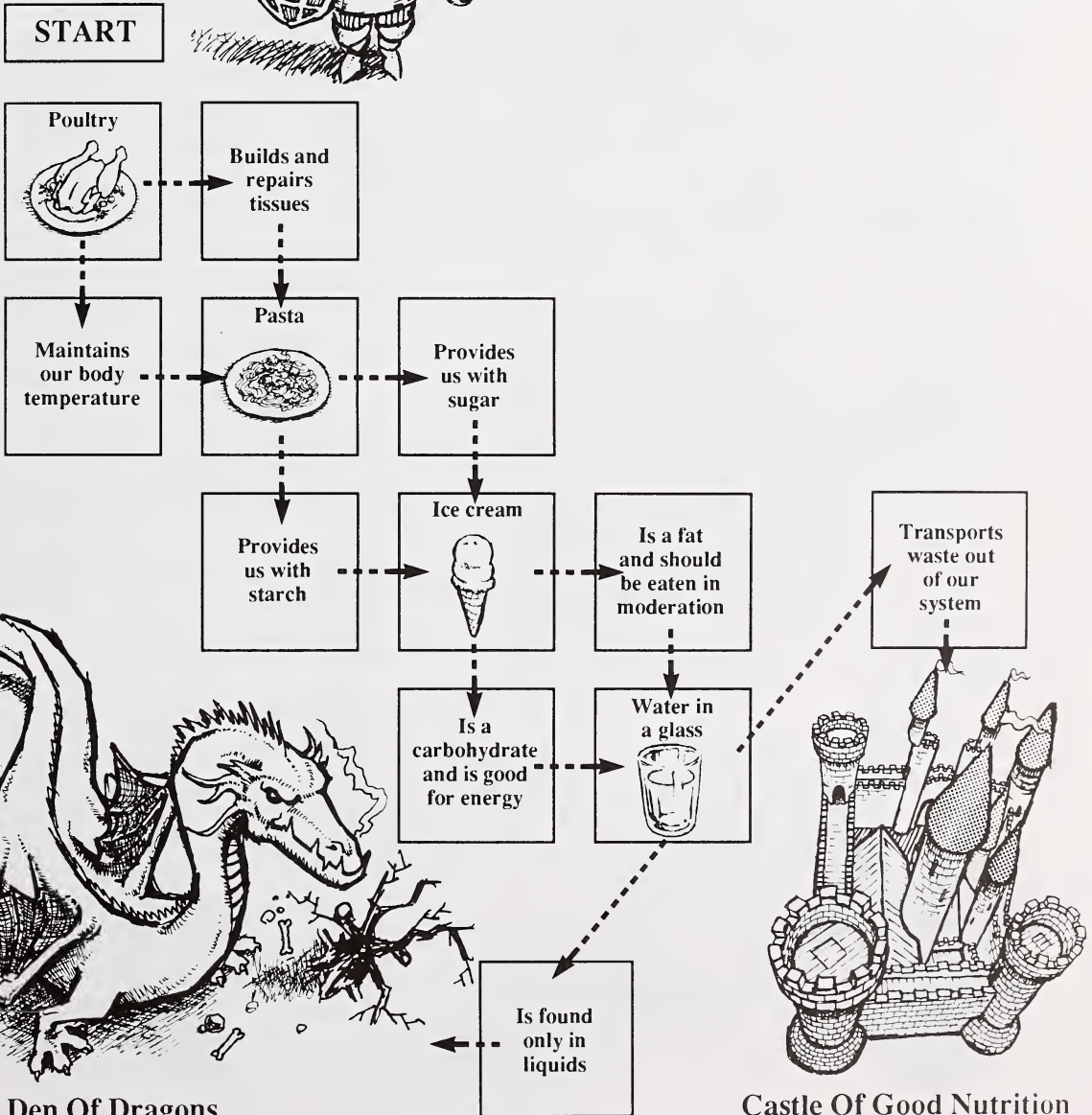
LESSON 3

A-maze-ing Foods

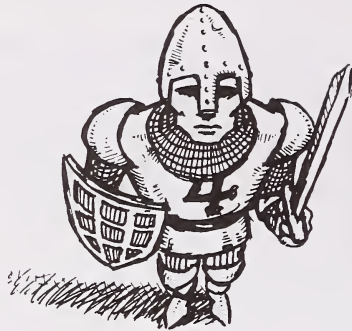
Name _____ Date _____



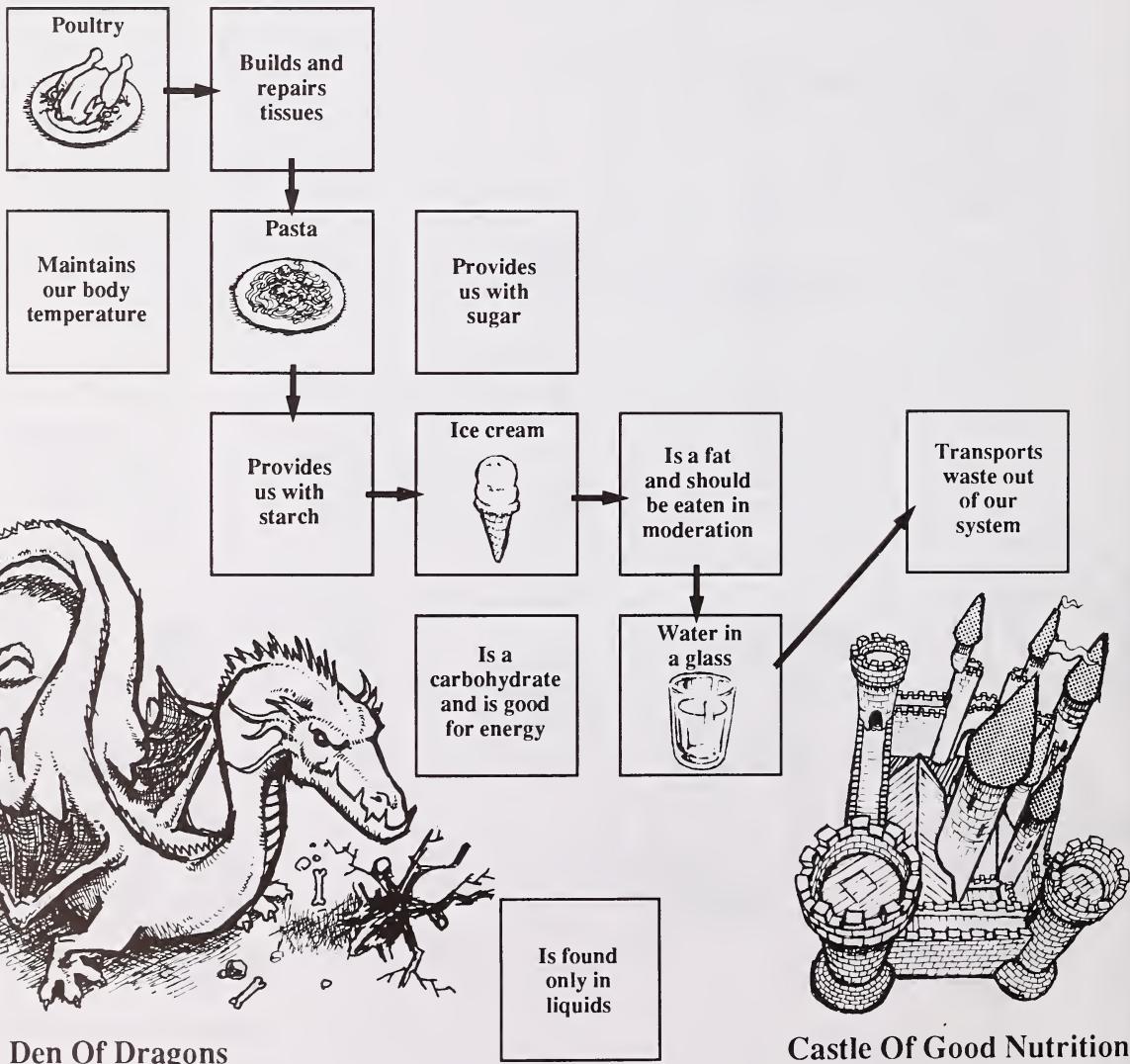
- 1) Lead your Knight of the Kitchen through the maze to the Castle of Good Nutrition.
- 2) At each food you have a choice of direction. Use your nutrition knowledge to choose the direction. Only correct choices will lead you to the castle.
- 3) Colour each choice as you make it.



Answers to A-Maze-ing Foods



START



I'm Beat

Curriculum Topic
Food functions

The door opened with a bang as Chris and Louis piled inside and dropped their schoolbags on the floor with relief.

"Mom," called Louis. "Chris and I are home."

"Great," replied Mrs Dumont, "I was hoping you'd remember to come straight home. Your hockey coach has called. The game is starting early tonight so you don't have much time. You'll both have to leave in 20 minutes so your supper is ready now. Take off your coats and come and get it."

Louis and Chris looked at each other meaningfully and sighed.

Louis hung up his coat and came into the kitchen looking uncomfortable. "Mom," he said. "Chris and I don't want to go and play hockey tonight. We're beat."

His mother looked at him. "How come?"

Louis sat down wearily. "We had a fitness test day at school."

"It was a sort of competition," explained Chris. "Our class against the other Grade 4 classes."

"First we ran around the gym for 20 laps, and we got points for the number of laps and the time it took us. Then we did aerobics, then we went for a long walk, then we did an exercise on the stairs to check our pulse rates. Then this afternoon..." Louis paused and gave a great big yawn.

"We had an interclass volleyball

tournament," finished Chris. "And we really are tired, Mrs Dumont."

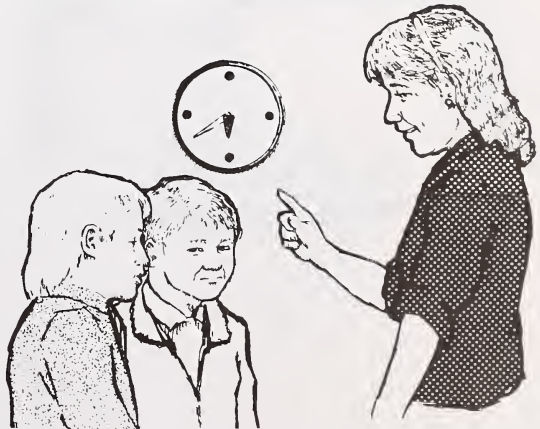
"I believe you," said Mrs Dumont. "That's quite a day. However we have a problem. Your hockey coach is picking you boys up in fifteen minutes and the team from Airdrie is probably already at the rink. Are you going to let your side down or is there something we can do to fix you up and give you energy?"

TEACHER ASKS THE CLASS TO
SUGGEST WHAT MIGHT HAPPEN
NEXT

"We can't really let the team down," muttered Louis.

"Coach will flatten us if we do," agreed Chris. "I wish we were supermen."

Mrs Dumont opened the oven door and a wonderful smell emerged. "I think this will help," she said. "What you need is energy food. You used up more energy today than you have replaced with food. That's why you are tired. If you fuel up you will feel better soon."



"That's right," agreed Louis. "Now what would the Knights of the Kitchen Table do?"

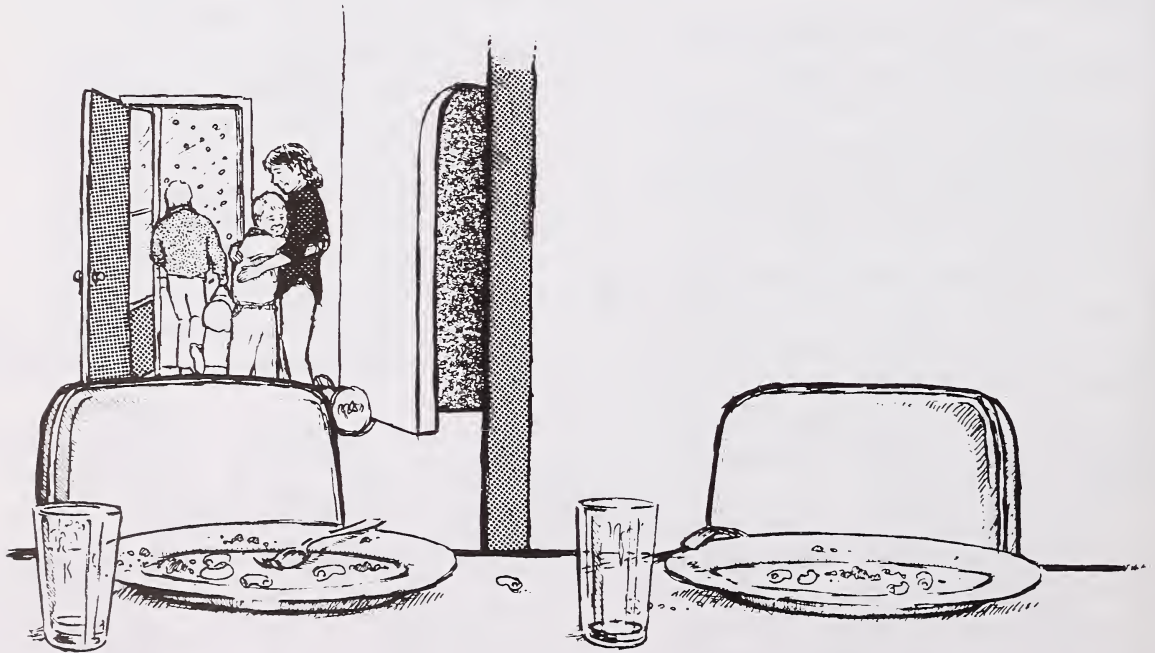
Chris eyed Mrs Dumont ladling out helpings of a meat and macaroni casserole. "We need high energy foods, some that are digested quickly and others that take longer so that it will last during the hockey game. We need carbohydrate and that's in the macaroni."

Louis added "Sugar gives us quick energy. There's natural sugar in fruit juice, so let's have a glass of juice with it." He ran to the fridge and poured two glasses of orange juice and set them on the table.

Chris added some salad to their plates of macaroni casserole and both boys dug in.

They were just chewing their last mouthful when they heard the coach's car outside. Quickly grabbing their gear, they made for the door.

Louis paused and came back to give his mom a quick hug. "Thanks Mom," he said. "You were right, I feel better already."



Lesson Activity

Curriculum Topic

What are the functions of food?

Objectives

- 1) Students will be able to define: carbohydrates, starches, sugars, proteins, fats, vitamins, minerals and water.
- 2) Students will understand the functions of these nutrients.

Materials Needed

the six *Nutrient Cartoons*
student copies of *Match the Food and Function* worksheets
glue and scissors for students
student copies of *Knights of the Kitchen Table Shield*

Procedure

- 1) One at a time, introduce the six *Nutrient Cartoons*. Clearly explain the name and the function. (Use the information on the back of the cartoons.)
- 2) Using the cartoons for reference, ask the class to think of the meal Louis and Chris had, and to comment as to why it made them feel better.
- 3) Look at the cartoons again. Ask class members to name their favourite foods and suggest which nutrients they contain.
- 4) Hand out the *Match the Food and Function* worksheet and let the class complete it.
- 5) When the worksheets are completed, give the students their *Knights of the Kitchen Table Shield* and have them fill in the fourth segment.

- 6) Collect the shields.

Follow Up

- 1) Place the *Nutrient Cartoons* on the classroom wall with a sheet of plain poster board under each one.
- 2) Have the students bring into class labels from foods eaten at home, or cut out food pictures from magazines.
- 3) Have them stick their contributions under the correct *Nutrient Cartoon*.

TEACHER'S NOTE: If a combination food is chosen, identify the main ingredient, then place under the appropriate cartoon. Talk about the other nutrients the food contains.

[Faint vertical text from bleed-through]

Protein

**Builds And Repairs The Tissues Of The Body
(Like A Carpenter)**



Protein: Builds and repairs all types of body tissue.

Vitamins

**Help Control The Processes in The Body
(Like A Police Officer)**



Vitamins: Regulate the reactions in the body to release energy from food.

Help keep eyes, skin, hair, blood, and other tissues healthy (make us glow).

Minerals

**Help Build Some Body Parts and Keep Them Healthy
(Like A Doctor)**



Minerals: Are part of the body's structure (eg. calcium and phosphorus in the bone).
Help to carry messages and materials (eg. water) from one cell to another.
Help build and maintain blood (iron).

TEACHER'S NOTE: Four chemical elements make up 96% of the body's weight - hydrogen, oxygen, nitrogen and carbon. Water, protein, carbohydrate and fat are all combinations of one or more of those four elements. Seventeen other mineral elements account for the remaining 4% of body weight. Each one plays an important role in achieving and maintaining normal health.

Fat

Stored Fuel
(Like Cut Wood)



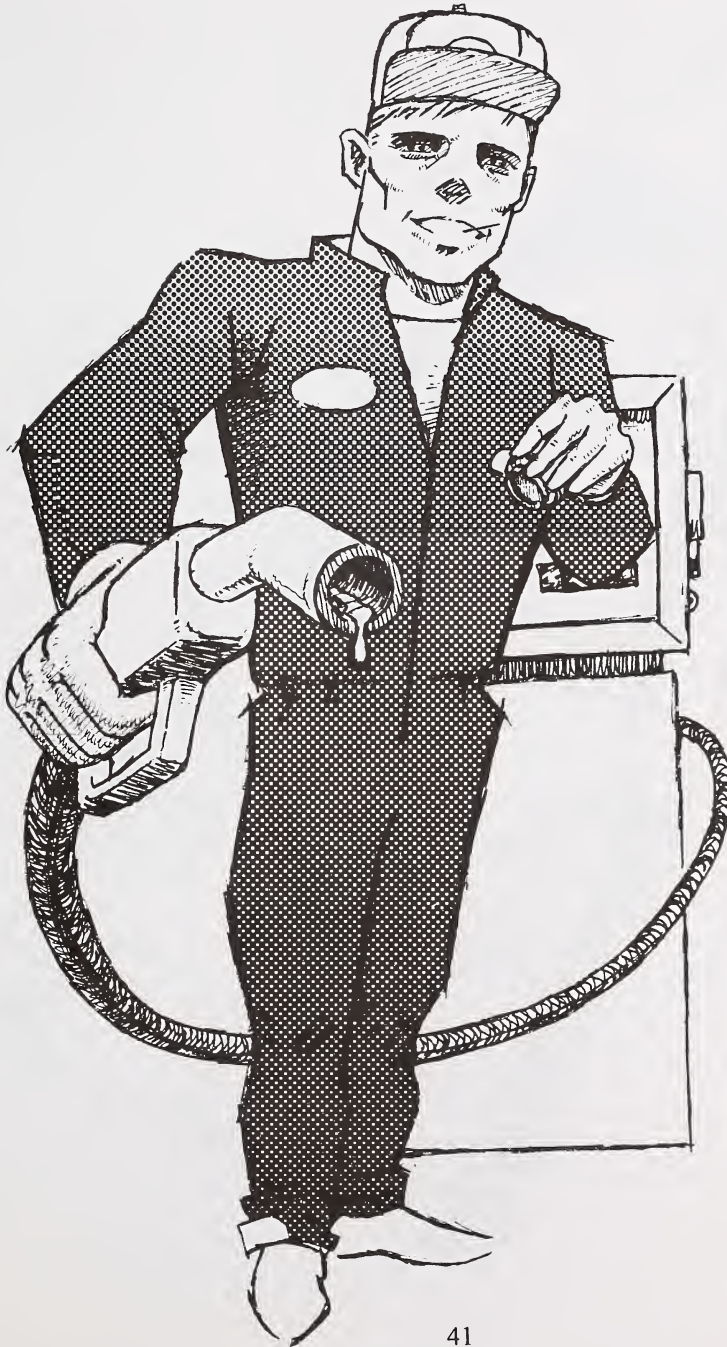
Fat: Helps the body in absorption and transportation of fat-soluble vitamins (A,D,E,K).

Provides a concentrated source of fuel for energy and also provides a storage form of body fuel.

Insulates and protects body parts.

Carbohydrates

Fuel
(Like Gas For Your Car)



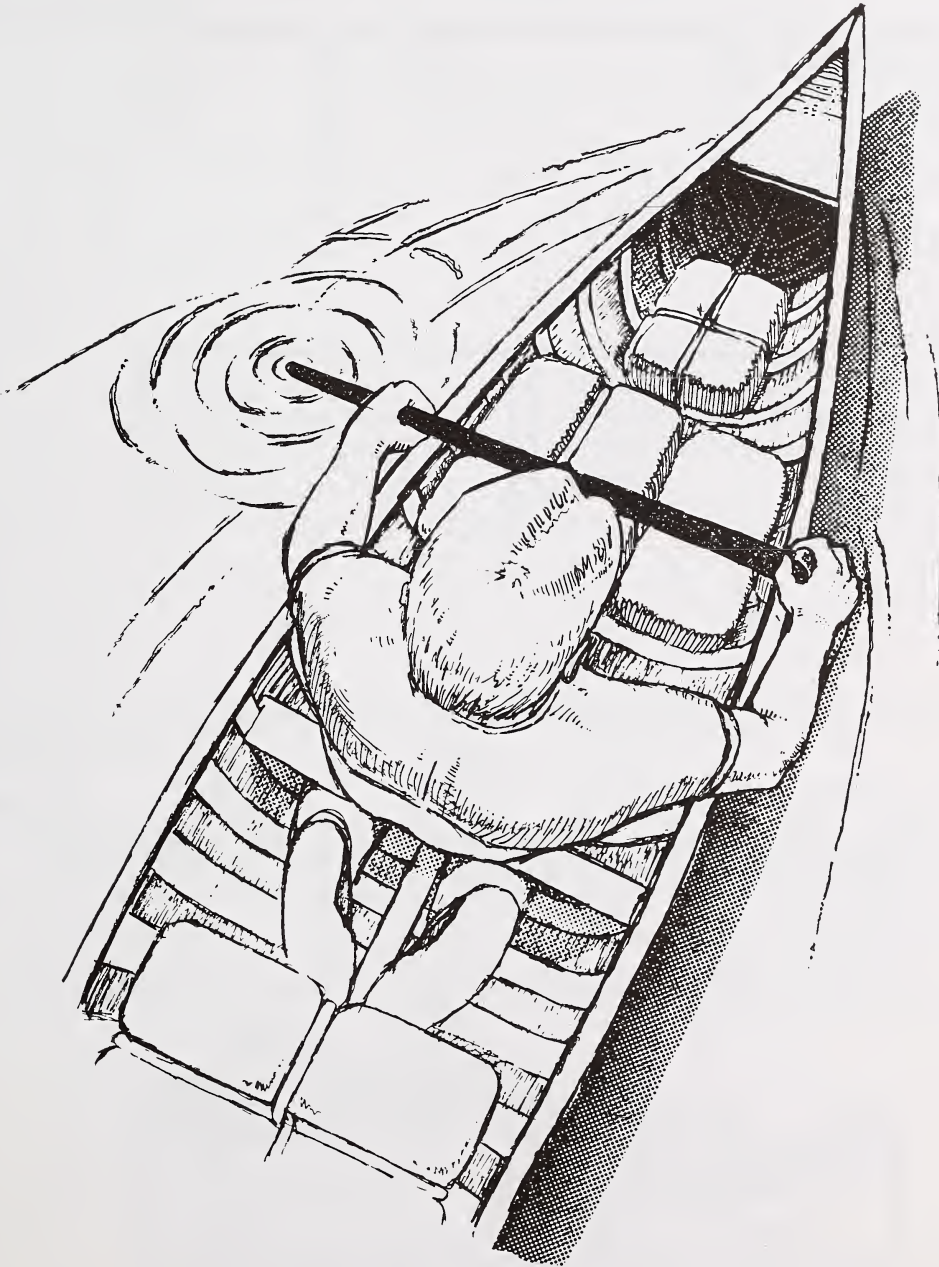
Carbohydrates: Supply energy.

Spare protein so that the body does not burn protein to provide calories (energy).

Assist in utilization of fats.

Water

**Transports Nutrients And Wastes In Your Body
(Like A Boat)**



Water: Dissolves and transports nutrients to body tissues; and takes body wastes to lungs, liver and kidneys.

Acts as a lubricant (eg. saliva helps us swallow food).

Helps regulate body temperature.

LESSON 4

Match The Food And Functions

Name _____ Date _____

1) Cut out the pieces from the food examples at the bottom of the page.

2) Match them to the correct food function pieces and glue them in place.

Food Functions

Fats

- provide energy in a concentrated form
- must be eaten in moderation

Protein

- builds and repairs tissues bones and teeth

Carbohydrates

- provide energy for the body

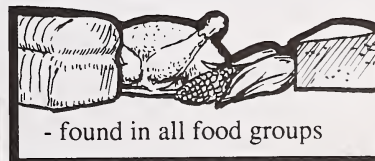
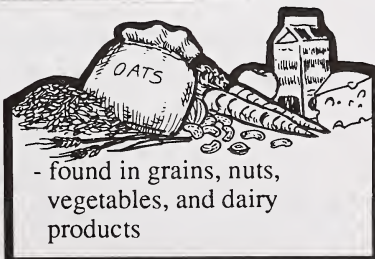
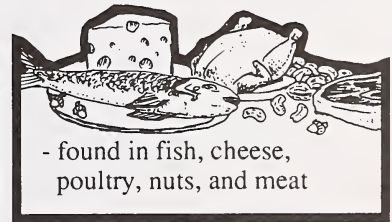
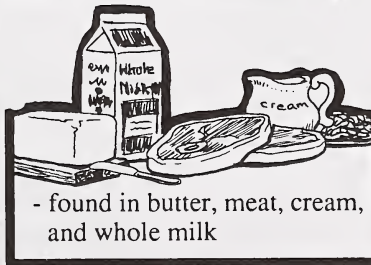
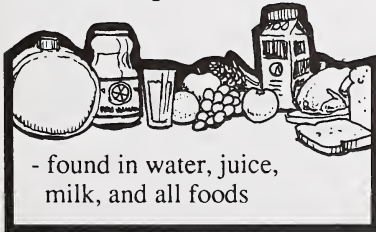
Water

- transports body wastes and nutrients through the body

Vitamins and Minerals

- keep the body parts healthy
- control the different body processes

Food Examples



We're Starving

Curriculum Topic

Daily food requirements include breakfast

TEACHER'S NOTE: This is an interactive story so it will take longer than usual. Give each student a copy of *Canada's Food Guide* before starting the story.

CLUB 4 were meeting in Mai Lin's basement. They were sprawled on the floor watching the Saturday cartoons when Hanna rolled over and looked expectantly at Mai Lin. "When's lunch?" she asked. "I'm starving."

Chris looked at his watch in surprise. "It's only 11:30 a.m. How come you are so hungry?"

"No breakfast," admitted Hanna with a grin.

"Naughty naughty," chanted Louis, Mai Lin and Chris, wagging their fingers at Hanna.

Question to the Class: WHY IS IT WRONG TO MISS BREAKFAST?

"Oh hooley," replied Hanna. "I just got up. Besides, I bet you didn't have a great breakfast anyway."

"Did too," replied Louis proudly. "I had four slices of french toast with loads and loads of maple syrup, and some chocolate milk."

"And what's so good about that?" said Hanna. "See, you're not perfect either."

Questions to the Class: DID LOUIS MAKE WISE BREAKFAST CHOICES? USE CANADA'S FOOD GUIDE TO

FIGURE IT OUT. WHAT WISER CHOICES COULD HE HAVE MADE?

Hanna turned to Mai Lin and Chris. "OK, so what did you guys have for breakfast?"

Chris laughed. "I had a big breakfast too. Dad was going out hunting with his friends so Mom cooked us a real hunter's breakfast. Porridge, bacon and eggs, and stuff. I'm not at all hungry."

Mai Lin was curious. "Well, go on Chris. How much did you actually eat?"

Chris grinned. "It all smelled so good," he said.

"No excuses," laughed Louis. "Come on, I owned up. How much of that did you eat?"

Chris looked a little embarrassed. "First we had porridge with milk and honey. Then I had four slices of bacon, a fried egg, and a fried tomato. Then I had two slices of bread with butter, and two glasses of milk."

Everyone laughed.

"No wonder you're not hungry," said Hanna. "You could hunt all day on that."

"My dad ate lots more than me," explained Chris. "He had two eggs, AND a bigger bowl of porridge and lots of bread."

Questions to the Class: DID CHRIS
MAKE WISE CHOICES FOR
BREAKFAST?
WHY DID HIS DAD NEED A
BREAKFAST WITH LOTS OF FAT
AND CARBOHYDRATE? USE THE
FOOD GUIDE TO FIGURE OUT ANY
OTHER FOODS CHRIS ATE.

THE WISEST CHOICES?
WHAT IS A WISE CHOICE FOR YOUR
LUNCH TODAY?

Everyone turned to Mai Lin.
"You're very quiet," teased Chris.
"Now it's your turn. What did you have
for breakfast?"

Mai Lin ticked the items off on her
fingers. "One banana sliced into a bowl
with one cup of milk poured over it, a
boiled egg, and one slice of toast, and a
glass of juice."

Questions to the Class: DID MAI LIN
MAKE WISE CHOICES?
WHAT FOOD GROUPS DID SHE
HAVE?

"Oh boy. You really put us to
shame, Mai Lin. That was a great
breakfast," said Hanna. "But I'm still
hungry."

"I know what to do," said Mai Lin.
"Let's look in the fridge, then each figure
out a Knight of the Kitchen Table lunch
that meets our daily food requirements.
They'll all be different because of our
different needs."

"I get it," said Chris. "If we look
at the daily food requirements and take off
what we had for breakfast, we can figure
out what we need for lunch and supper."

Hanna and Mai Lin poked Chris in
the tummy. "You might not need any
lunch," they said. "You can't fit anything
else in."

Question to the Class: WHO MADE

Lesson Activity

Curriculum Topic

The daily food requirements for a grade 4 student.

Objective

Students will identify their daily food requirements.

Materials Needed

student copies of *Canada's Food Guide*

student copies of *Knights of the Kitchen Table Shield*

Procedure

1) Explain that the students are going to make up their own chants or cheers to help them remember *Canada's Food Guide*.

2) Brainstorm ideas with the students. Write the following examples on the board if ideas are slow.

- a) Five to ten, not one to four,
Vegetables and Fruit make
us roar.
- b) This is a joint effort. The
teacher reads the lines and
the students shout the
answer in the brackets.

Give us an M

(M)

Give us an I

(I)

Give us an L

(L)

Give us a K

(K)

Now tell me, tell me,
what does it say?

(MILK)

Drink it not once,
But three or four times
Then shout how you feel
(FINE FINE FINE)

3) Divide class into four groups and assign each a food group.

4) Working in pairs, the students compose a cheer or chant.

5) When they are finished, hand out the student copies of the *Knights of the Kitchen Table Shield* and have them complete the next segment.

6) Collect the shields.

Follow Up

1) Each pair performs its chant.

2) The class judges the best chant for each food group. These are adopted as the class chants.

Up Before the Birds

Curriculum Topic

Planning a balanced breakfast

Chris and his mother crept into the kitchen with relief.

"That was great Chris," his mother whispered. "We managed to get up without waking any one else."

Chris yawned and looked at the dark kitchen window. "What time is it Mom? It's still dark outside."

"It's only 5:30 a.m. We'll make a good start on the road and get to Grandma's by lunch time. But first, breakfast."

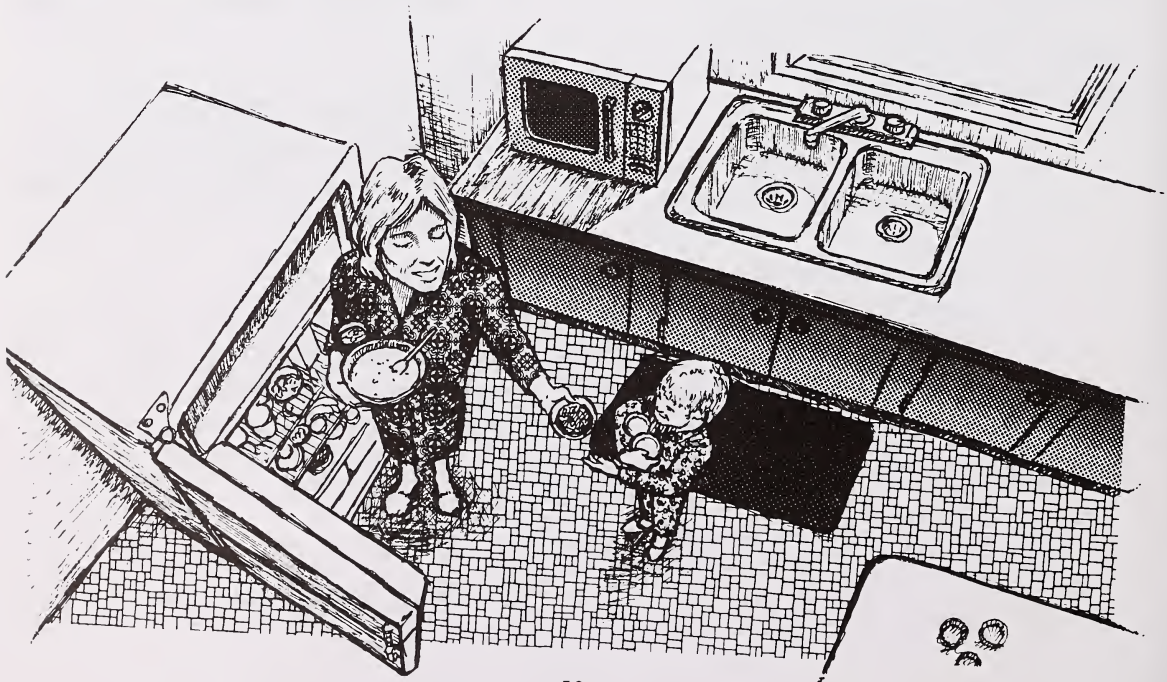
Mrs Melnyk bustled to the fridge and took out a large bowl of batter and some smaller bowls containing a variety of chopped ingredients.

Sleepily Chris watched her. "Mom, what's all that stuff?"

His mother showed him the bowls and passed him a small empty one. "It's make your own muffin time," she explained. "The batter is ready so just put a couple of spoonfuls into your bowl." She looked at the other ingredients and added some chopped cooked ham and green onions to her muffin mixture.

"Watch," she explained. "You add a couple of spoons of anything you like to your mix." She stirred it well as Chris watched, then dropped the mixture into a couple of cup cake papers and popped them in the microwave oven. "One minute, that's all it takes!"

Carefully Chris spooned batter into his bowl and looked at the other ingredients.



There were sliced bananas, chopped apple, nuts, blueberries, and grated cheese as well as the ham and onions his mother had used. "Do both muffins have to be the same?" he asked.

"Not if you use less batter for each one and mix them separately," explained his mother as she lifted her steaming muffins from the microwave oven.

Chris looked up in amazement. "It really does only take a minute to cook two muffins in the microwave?"

"Sure, that's why it makes a quick breakfast. Come on Chris, do yours."

Chris hesitated, then added some banana and a few nuts to his batter, and spooned it into a cup cake paper. Then he took some more batter and this time added grated cheese.

"Now what do I do?"

His mother showed him how to use the microwave, and one minute later he had two hot and fragrant muffins on his plate.

"Wow, this is really something," muttered Chris with his mouth full. "Let's do it again some other day."

Lesson Activity

Curriculum Topic

Planning a balanced breakfast

Objectives

- 1) Students will learn a quick and nutritious breakfast alternative.
- 2) Students will discuss the elements of a balanced breakfast.

Materials Needed

English muffins - enough to provide one half per student
several bowls of 'chopped choices'
eg. cheese, (grated, sliced, or spread)
frozen blueberries, sliced bananas, or other fresh fruit, peanut butter, nuts, meat, spread, chopped egg, yogurt
plastic teaspoon for each student
several plastic knives
paper serviettes
student copies of *Designer Muffin* worksheet
student copies of *Knights of the Kitchen Table Shield*

TEACHER'S NOTE: Sprinkle fresh fruit with lemon juice to prevent browning.

Procedure

- 1) Prepare the topping ingredients prior to the class. Cover with plastic wrap and store in the refrigerator.
- 2) Push several desks together to make small work centres.
- 3) Place one muffin topping on each work centre with appropriate utensils.
- 4) Make sure all students wash

their hands.

- 5) Have the students line up and take half of a muffin, a serviette and spoon.
- 6) Have the students choose one or two toppings to spread on their muffins.
- 7) Eat and enjoy.
- 8) While eating discuss what could be added to the muffins to make a balanced breakfast (eg. a glass of milk and a banana).

Follow Up

- 1) Complete the *Designer Muffin* worksheet, and try the recipe at home.
- 2) Hand out the copies of the *Knights of the Kitchen Table Shield* and have the students fill in the sixth segment.
- 3) Collect the shields.

LESSON 6

Designer Muffins

Name _____ Date _____

Design a muffin with as many food group choices as possible.

List your choices in the space below.

You may add a total of about 125 mL of chopped choices to the Microwave Bran Muffin recipe (see next page) to create your own muffin recipe at home.



What would you eat with this muffin to give you a balanced breakfast?

Tested Recipe
ALBERTA AGRICULTURE
Home Economics Branch

Microwave Bran Muffins

75 mL	shortening
250 mL	branflakes
150 mL	milk
250 mL	flour
25 mL	baking powder
2 mL	salt
50 mL	molasses
1	egg
125 mL	"chopped choices"

Melt shortening in custard cup with full power. In order given, place remaining ingredients in large bowl. Blend in shortening (refrigerate if using next day). Add approximately 125 mL chopped ingredients. Place two paper cups in each custard cup or microwave muffin cup. Fill cups just over half full. Arrange in oven in ring in batches of six. Microwave with full power 3 to 4 min*, until dry on top. Rotate after each min. Remove to wire rack immediately.

Makes 10 to 12 muffins.

*Muffins can be baked in conventional oven 20 min at 200°C (400 degrees F).

The Field Trip

Curriculum Topic
Nutritious snacks

*"We all live in a yellow submarine,
A yellow submarine, a yellow
submarine"*

As the yellow school bus roared down the highway, the grade 4 class sang louder and louder.

Mai Lin stuck her fingers in her ears and leaned across the aisle and shouted to her teacher, "Ms Reynolds, when will we get to Edmonton?"

"In about another hour. Is the noise bothering you Mai Lin?" asked Ms Reynolds.

"Yes, I've got a headache," replied Mai Lin miserably.

"OK, it's time for some peace anyway," replied the teacher and she stood

up and clapped her hands loudly.

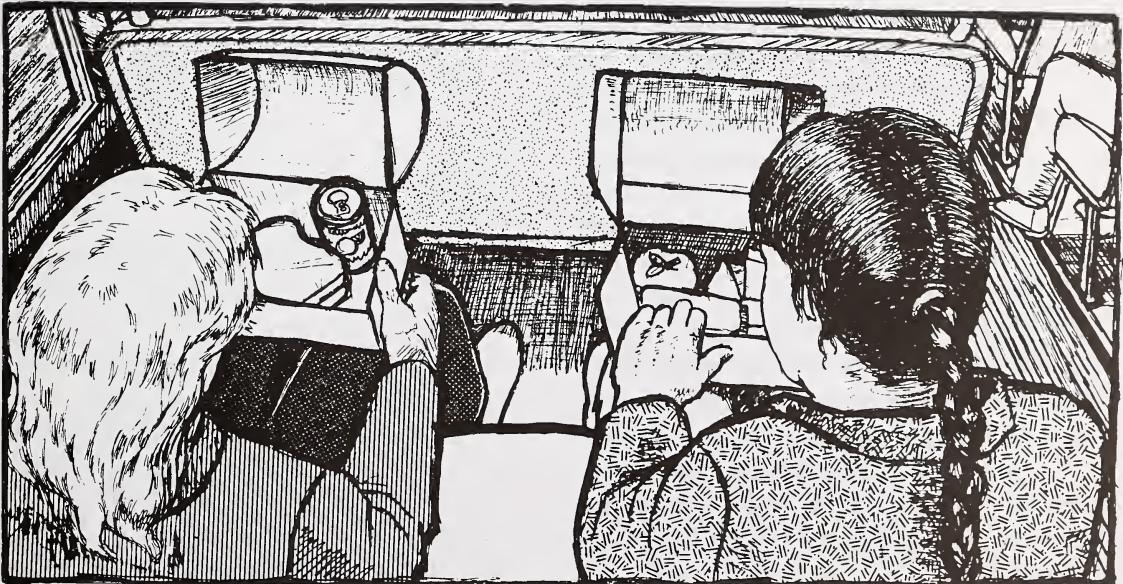
Gradually the singing died away as everyone looked expectantly at Ms Reynolds. "You've been singing for quite some time," she explained, "and now it is quiet time. We will be arriving in Edmonton in about one hour, so you may take out your snacks and eat them now."

"HURRAY!" came the cheer, and quiet fell as everybody rustled in their bags for their snacks.

"What did you bring, Mai Lin?" asked Hanna.

"An apple, a granola bar and some milk. What did you bring?"

"Some juice and a peanut butter and jam sandwich," said Hanna. "I guess we both have some other foods today."



"Which is my other food?" asked Mai Lin. "I thought I'd chosen a good snack."

"The granola bar," explained Hanna. "It's mostly sugar, like my jam."

Mai Lin was interested. "How did you know that Hanna? I always thought granola bars were nutritious."

"My mom showed me how to read labels. The ingredients of foods are always listed in order."

"In what order?" asked Mai Lin.

"In the order of the amount of the food. The main ingredient is first, then the second, then the third, see? In most granola bars, one of the main ingredients is sugar."

Hanna and Mai Lin bent over the granola bar to see what it said. Sure enough the second ingredient was sugar.

"Well," said Mai Lin, "That won't matter as long as I only choose one occasionally. Besides, I've got the apple and milk too."

Chris and Louis leaned over the seat behind. "Hey, let's see what you've got," yelled Louis. "I've got celery and carrot sticks and some potato chips. Want some?"

Mai Lin cringed. "Don't shout, Louis. That was right in my ear."

Louis was hurt. "I was only offering you something to eat."

"Come on, you two," pacified Chris. "Mai Lin's head is hurting, that's why she's ratty. We've all brought an other food. I've got four cheese slices, an orange and some pop. Tell you what, why don't we pool our snacks and make them all more nutritious?"

CLUB 4 looked at their combined snacks. Yes, they had all brought one other food but between them they had something from all four food groups.

"OK," they all agreed, and started to divide everything into four balanced snacks.

How did they do it?

TEACHER'S NOTE: List all the snack items on the board and take suggestions from the class as to the best way to divide them to make four balanced snacks.

Lesson Activity

Curriculum Topic

Why are nutritious snacks important?

Objectives

- 1) Students will discuss why nutritious snacks are important.
- 2) Students will read ingredients on labels and determine if the food should be classified as an other foods.
- 3) Students will identify the best choice from a selection of snacks.

TEACHER'S NOTE: Before this lesson, ask the students to bring from home food labels from snack items, eg. potato chips, granola bars, cheese snacks, pop and fruit drinks, etc. The teacher should also look for 'good snack' labels the students might not choose (like unsalted nuts or seeds) and bring those in.

Materials Needed

- a variety of food labels or wrappers
- 4 sheets of poster board and a felt tip marker
- glue
- student copies of *Before and After* worksheet
- student copies of *Knights of the Kitchen Table Shield*

Procedure

- 1) Discuss with the class why snacks are important (nice treat, gives boost of energy).
- 2) How can good snack choices help us? (Many snacks are high in sugar which is bad for our teeth. Choosing ones

low in sugar and fat helps maintain teeth and weight and still gives us energy. Nutritious snacks provide more value for your food dollar.)

3) Have the students examine their food labels to see the order of the main ingredients (the first four listed). Are any names misleading? For example, how much milk is there in a milk chocolate bar? Consider orange juice, orange drink and orange pop, and see which contains the most natural orange juice. Ask some volunteers to read their labels. Discuss findings.

4) Using the felt tip pen, title each of three sheets of poster board as follows: **Wise Snacks, Occasional Snacks, Unwise Snacks.**

5) One at a time the students come to the front and glue a label onto the correct sheet according to the list of ingredients. Have a class discussion if there is a difference of opinion as to where the label fits.

6) Take the last sheet of poster board and write the heading **Wise Snacks**. Put it up and ask if any one knows why the very best snacks often have no lists of ingredients (natural food - apples, oranges, unsalted nuts, celery, carrots, etc.). Ask students to bring pictures of these foods to stick up on the poster.

7) Give out the *Before and After* worksheet and the *Knights of the Kitchen Table Shield*. Discuss how a less nutritious snack could be made more nutritious.

8) Have the students do the worksheet and when they are finished, have them fill in the seventh segment of their *Knights of the Kitchen Table Shield*.

Follow Up

Have the students bring in pictures of the wisest snacks and glue them to the poster board. Write a paragraph about their favourite snack, what group it falls into and how they could improve it if necessary. Stick these up around the posters.

LESSON 7

Before And After

Name _____ Date _____

Use your imagination to add another food choice (nutritious addition) to these snacks to make them more nutritious. Each nutritious addition may be used only once.

List the food groups the completed snack represents or indicate if it is an other foods.

Look at the first example for ideas.

Snack	Nutritious Addition	Food Groups
nacho chips	cheese	milk products other foods
pop		
slice of bread		
ice cream		
jam sandwich		
cookies		
granola bar		
fruit bar		
candy		

Big Mike Keeps Fit

Curriculum Topic
Fitness and food

The trail above the river was very steep and although the day was crisp and clear, the members of CLUB 4 were hot and sweaty by the time they had puffed their way to the top.

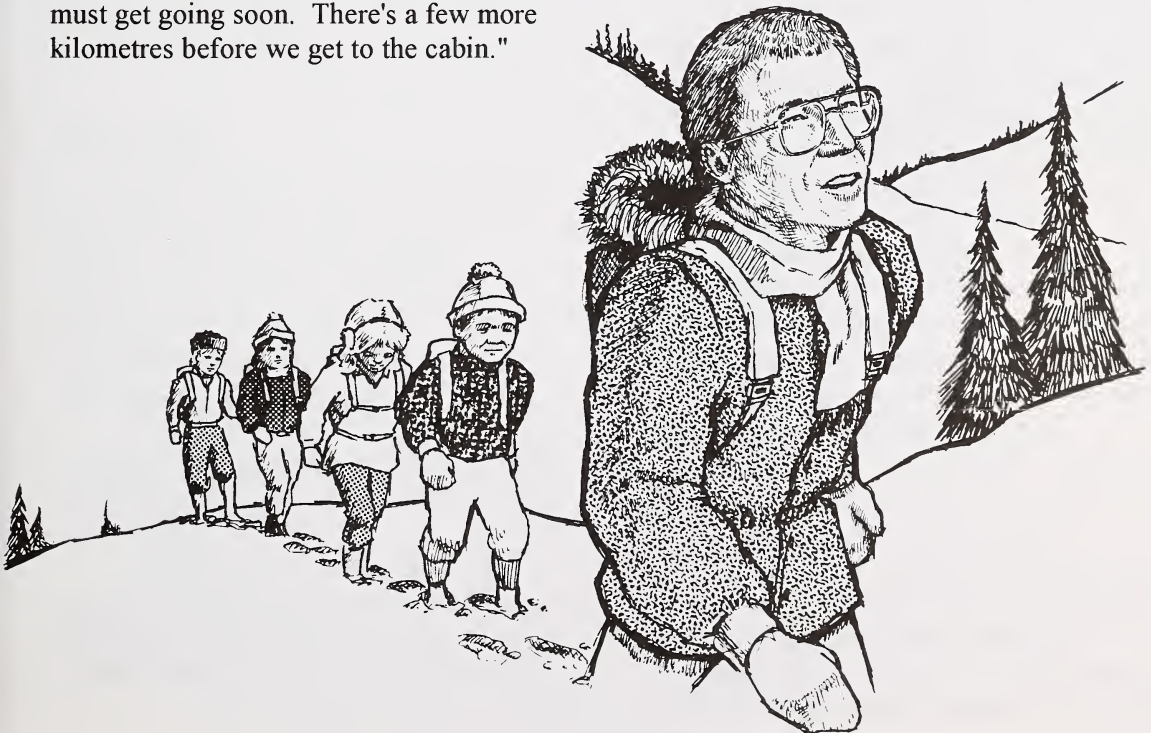
"Phew," said Mai Lin as she sat down on a rock and looked at the river below them. "I'm beat. Can we rest, Big Mike?"

Louis' uncle grinned at the kids as one by one they dropped their packsacks and found a place to rest. "You kids are out of shape. We've only come a couple of kilometres. I'll give you five minutes or you'll catch a chill in this cold wind. We must get going soon. There's a few more kilometres before we get to the cabin."

Chris groaned and rolled on his back. "We must have been nuts to get Louis to ask you if we could hike into your trapping cabin. I never really believed how far seven kilometres was. You must be really fit, Big Mike."

CLUB 4 looked at Big Mike. He was fit! Not only was he tall, well over 2 meters, but he was broad and muscular without a bit of fat on him.

"Do you hike like this every day?" asked Mai Lin curiously.



"Well now, in the winter I do. I have to walk the trap line each day to pick up the fresh catches. But in summer I have to go to town to get the right kind of job, or I'd soon be fat as a pig."

"What do you mean, the right kind of job?" asked Hanna.

"I have to get a job on one of the farms, or a construction job. Something that keeps me active," explained Big Mike. "I'm used to big solid meals so I have to make sure I always use enough energy to burn them off. If I don't do active work I soon put on weight. Then I'd be Bigger Mike eh! I'd hate to have to go on a diet."

"Why is it that kids shouldn't go on diets but adults are always talking about it?" Chris mused.

"It's the old input/output," explained Mike. "See, kids are growing all the time. Even if you stayed in bed all day, your body would still use up a certain amount of energy to grow. Most kids are very active. You run around and play games so you need nutritious food to give you running energy as well as energy to grow. Besides, different parts of the body grow and develop at different rates and you cannot guess what your body needs next. So, if you go on a diet you might be depriving your body of something it needs. Adults have stopped growing. Whatever we eat, we have to make sure we use up by being active. If we eat more than we use... then we put on weight."

"But some kids ARE fat," protested Mai Lin. "Dad says I've got puppy fat, and there are lots of kids fatter than me."

"Yes, but if you walked like this every day, you'd soon lose it. More exercise, that's all most kids need."

Big Mike straightened up and took a great breath of fresh air. "OK, gang, let's get this show on the road. We've five

more kilometres to go and then your Aunt Cindy has moose stew and saskatoon pie waiting for us."

"Hurray, my favourites," yelled Louis. "Bet I'm there first."

"I'm right behind you," teased Mai Lin. "After this hike I'll have certainly burned up enough energy today."

Lesson Activity

Curriculum Topic

The relationship between fitness and food.

Objective

Students will demonstrate their understanding of the relationship between fitness and food by examining dietary profiles and suggesting improvements.

Materials Needed

the six story profiles
pens and paper for each student
student copies of *Knights of the Kitchen Table Shield*

Procedure

1) Discuss concept of input/output. Why did Big Mike need to keep active? What would happen if he spent the summer working in an office instead of working on a construction site? Why do most students not need to go on diets? How can students watch their weight?

2) Look at each of the six pictures. Let the class suggest which person looks as though they have the best lifestyle and give reasons.

3) Explain that the students are going to examine a story profile and decide how that person could improve his or her lifestyle. Then each student will

figure out his or her own profile and see if there is any way it could be improved.

4) Write the following headings on the board: **Job, Favourite Part of Job, Pet Peeve, Favourite Food, Food Most Avoided, Favourite Snack, Favourite Drink, Daily Time Watching TV, Daily Exercise, Hours of Sleep, Health, Suggested Improvements.**

5) Divide the class into six groups. Give each group one of the profiles. Appoint a group reader and a group recorder in each group. The reader reads the profile to the others. The recorder writes down suggestions for improvement.

6) Have the groups discuss the profile and decide what areas need improving and suggest improvements.

7) Have the recorders present the picture and profile to the class and read out their group's suggestions.

Follow Up

1) Have the students copy the headings from the board onto a sheet of paper and then use those headings to write a secret profile on themselves. They should be completely honest and try to decide how their lifestyle can be improved.

2) a. Have students bring in copies of outrageous diet ads that promise quick fixes. Ask them to evaluate whether they would work. (Healthy eating combined with physical activity is the only reliable weight control program.) Remind students that even if the "quick fix" is endorsed by a doctor that person may not have any background in nutrition or exercise and may not even be a doctor of medicine.

b. Have students look through magazines to identify the current "model look." Ask if they think this is realistic for most people.

c. As a follow up ask students to observe people for 10 to 20 minutes when they are shopping, or at a public event. During this time have them count the number of persons that go past them and have what they consider to be the "model look." This includes their clothes, hair, make-up, body shape and size. Have students be as critical as if they were the editor of a magazine. Are the media showing a realistic proportion of the population?

Teacher's Note: It's important that students learn that most students their age don't need to diet. Active living and healthy eating will control weight problems. Students should learn that their bodies need more nutrients during adolescence than at any other time. They should also learn that there will be times when they put on extra weight (usually before

a growing spurt) but this weight will go away if they keep active.

Emphasize the idea that not everyone's body is shaped like a model in a magazine. Nor should it be! We are all different!

Remind students that they are more than just the numbers on a scale. Remind them to COUNT THE FOOD GROUPS and NOT THE CALORIES. You are an individual!

Skipping meals often result in eating larger amounts of food later in the day and poor eating habits. Remind students that it is best to eat regular meals throughout the day. Skipping meals does not help in weight loss because the metabolic rate slows down during fasting, which makes it more difficult to lose weight. Avoid pills, powders, and special pre-packaged diet food programs. These can be very dangerous. If a product looks too good to be true, it probably is.

3) Give out the student copies of *Knights of the Kitchen Table Shield* and have the students fill in the eighth segment.

4) Collect the shields.



Chris Melnyk

Job: Elementary school student

Favourite Part of the Job: Library class
and gym

Pet Peeve: Being class monitor and having
to sweep up after art class

Favourite Food: Macaroni and cheese

Food Most Avoided: Spinach

Favourite Snack: I love to have a
chocolate bar when I'm watching TV, but I try not
to now that I'm in CLUB 4.

Favourite Drink: Milk

Favourite Activities: I watch TV and
build model airplanes.

Daily Time Watching TV: Three or four
hours

Daily Time Exercising: I don't do that
much unless we have gym at school. Oh, I go to
Scouts once a week and we play games there. I
guess I should walk to school, but most days Dad
drops me off on his way to work.

Hours of Sleep: I go to bed about nine
o'clock, but I like to read for awhile. I get up at
seven in the morning.

Health: Good, except when I catch colds

Comments: I think I eat pretty well, but I
like to snack. I don't really like exercise that much.
It was fun when we walked to Big Mike's but it was
real hard work hiking with a packsack. Even
though Aunt Cindy had taken our sleeping bags and
clothes in the jeep, our packs were still heavy after
awhile. I'd like some suggestions for an activity I
might like, some good snacks and other stuff I
should do.

Suggested Improvements?



Louis Dumont

Job: Elementary school student

Favourite Part of the Job: Recess and math

Pet Peeve: Jodi Smith is always getting on my case.

Favourite Food: Aunt Cindy's saskatoon pie

Food Most Avoided: Licorice

Favourite Snack: Ice cream

Favourite Drink: Root beer

Favourite Activities: Hockey and dirt biking.

Daily Time Watching TV: I watch about two to three hours on a weekday and sometimes all day on Saturday. I know I shouldn't but I love the cartoons.

Daily Time Exercising: Usually I exercise for a couple of hours. I have hockey practice most lunch times and we often play after school. Sometimes on a Sunday I cross country ski or snowshoe with my mom and dad or Big Mike.

Hours of Sleep: I hate going to bed early and Mom says I don't get enough sleep but I think I get about eight hours each night.

Health: Great I guess

Comments: I think I do lots of activities, and sometimes I get real hungry. Guess I'm like Big Mike and need lots of solid meals. Should I have a nutritious snack before a game or just a big meal afterwards? Last night I had a float with ice cream and root beer, but Hanna said that was no good and I should have had an apple. Was she right? I knew I would work it off in the hockey game.

Suggested Improvements?



Hanna Bogart

Job: Elementary school student

Favourite Part of the Job: Language arts and music

Pet Peeve: I don't like winter because it's too cold to do anything I like.

Favourite Food: Raspberries from the garden made into raspberry upside down pudding

Food Most Avoided: Fish

Favourite Snack: Gum, but I only get the sugarless kind

Favourite Drink: Apple juice

Favourite Activities: Riding my bike

Daily Time Watching TV: Almost none in the summer and about four hours in the winter

Daily Time Exercising: In the summer I ride and swim and help Mom and Grandma in the garden. But I do what everyone else does in winter like walking to school and gym classes.

Hours of Sleep: I sleep eight to ten hours on school days but stay up on Fridays and Saturdays.

Health: Good

Comments: I don't like the winter too much because I cannot ride my bike. I went snowshoeing once with Louis' family, but I kept tripping over the snowshoes. I like working in the garden with Mom and my grandmother and I think we eat a lot of the right things because we grow most of it ourselves. We all like cooking though and make yummy desserts. I wish I could think of something I'd like to do in the winter.

Suggested Improvements?



Mai Lin Lee

Job: Elementary school student

Favourite Part of the Job: Physical education when we do gymnastics, and school patrol

Pet Peeve: Getting hit in the shins in floor hockey

Favourite Food: Dad's chow mein

Food Most Avoided: I don't know why I don't like tomatoes, but I don't.

Favourite Snack: Potato chips

Favourite Drink: Chocolate milk

Favourite Activities: Gymnastics club and reading

Daily Time Watching TV: About two hours

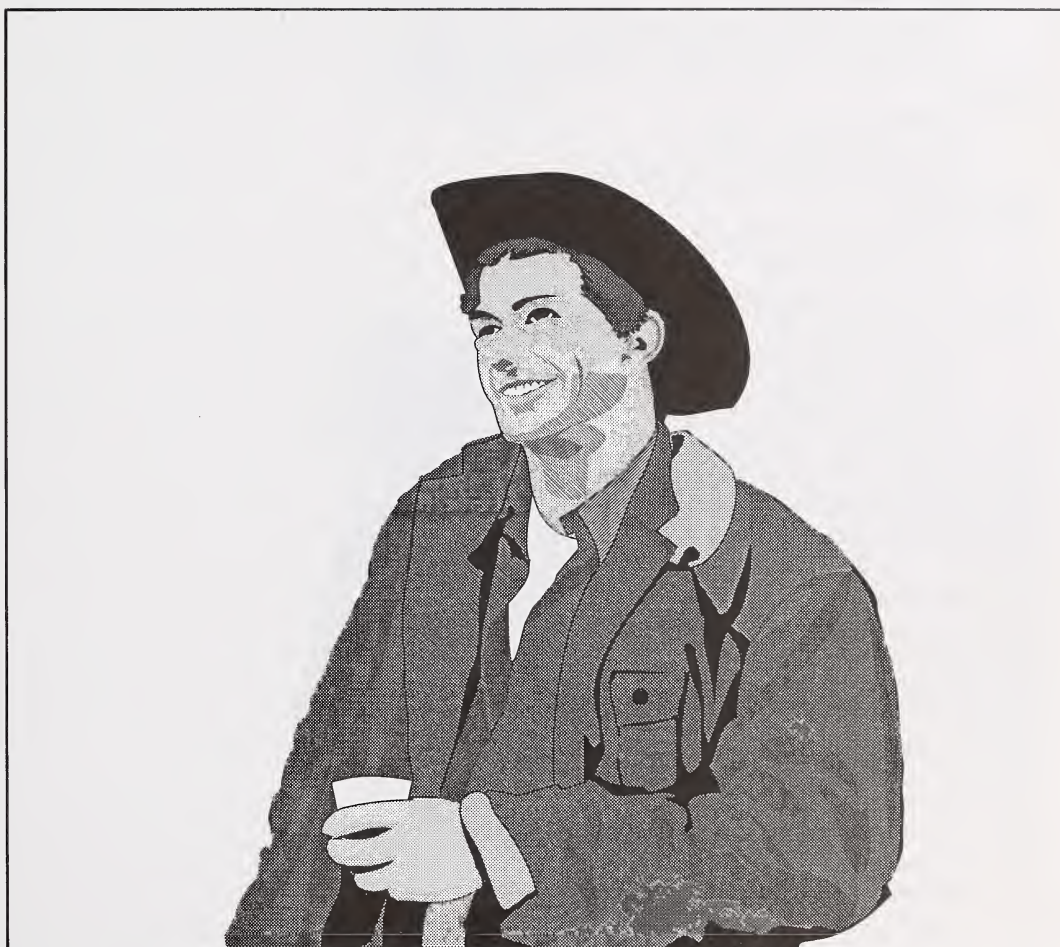
Daily Time Exercising: I go to gym club twice a week for an hour.

Hours of Sleep: About nine

Health: Great

Comments: I love gymnastics but don't really do much else. I help my dad in the supermarket after school by loading shelves. I guess that is a sort of exercise. I get to choose a snack when I've helped Dad and maybe I should cut those out. Dad says I've just got a bit of puppy fat and it will soon go, but Grandma Lee thinks I should eat more vegetables and Mike said I should do more exercise. Who's right?

Suggested Improvements?



Big Mike

Job: Trapper in winter, construction worker in summer

Favourite Part of the Job: Being out in the fresh air

Pet Peeve: Lazy people

Favourite Food: Stew with dumplings

Food Most Avoided: Candy - it's good for nothing

Favourite Snack: Apple

Favourite Drink: Milk

Favourite Activities: Snowshoeing and bird watching

Daily Time Watching TV: We don't have one.

Daily Time Exercising: I exercise most of the day - it's part of my job.

Hours of Sleep: Six or seven

Health: Fantastic

Comments: I think I live a real healthy life. I am out in the fresh air all day and that makes me very hungry. I always eat big meals but I don't put weight on because I work it all off. I was first called Big Mike when I was a kid. I was kind of fat then but my dad always ate what he called 'hunter meals' and I used to copy him. It was only when he took me out on the trap line with him that I realized how hard he worked and why he needed big meals. Once I started working in the outdoors I soon worked off my fat. Now I'm Big Mike because I'm real tall. I think kids don't exercise enough. They're always riding around in cars instead of walking. If Cindy and I have kids we'll feed them real good but make sure they do lots of activities. Don't you figure that makes sense?

Suggested Improvements?



Cindy Dumont

Job: Part-time teacher

Favourite Part of the Job: Teaching children to read

Pet Peeve: Having to tie the kindergarten children's shoelaces

Favourite Food: Caesar salad

Food Most Avoided: I hate to see people chewing gum!

Favourite Snack: Cheese

Favourite Drink: Orange juice

Favourite Activities: Gardening or berry picking in the summer, skating in the winter

Daily Time Watching TV: We don't have one

Daily Time Exercising: I walk a couple of hours every day to school on the reserve. That's about four kilometres away from our cabin. In the summer when Mike is in town, I do lots of gardening and hike around gathering the different wild berries to freeze for the winter. In the winter we have a problem being able to get fresh milk and fresh vegetables. I freeze a lot of food in the fall to see us through. I do lots of baking too as both Mike and I like home made food. Kneading bread is real good exercise.

Hours of Sleep: Seven or eight

Health: Good

Comments: I like our life style, though some people think it must be hard work. I guess it is if you compare it to living in the city where you have cars and other conveniences. I am not as active as Big Mike, so I don't eat as much as he does. I eat the same things, just not as much of them. I think we will have to watch our weight when we get older. When we are not as active we will have to eat less. But that's a long time away.

Suggested Improvements?

What's Inside our Insides?

Curriculum Topic
Food and digestion

The Calgary hospital was very large and the members of CLUB 4 were not sure where to go. Suddenly Chris saw the information sign and rushed across to speak to the person at the desk.

"We're in the wrong building," he reported. "The labs are in the building behind this one. Come on," and he dashed down a long corridor and out into the parking lot.

Hanna started to laugh. "I bet we are the only kids spending the long weekend dashing around a hospital. This is really neat. I've never been inside a hospital let alone had a chance to see a lab."

"Neither have I," admitted Chris.

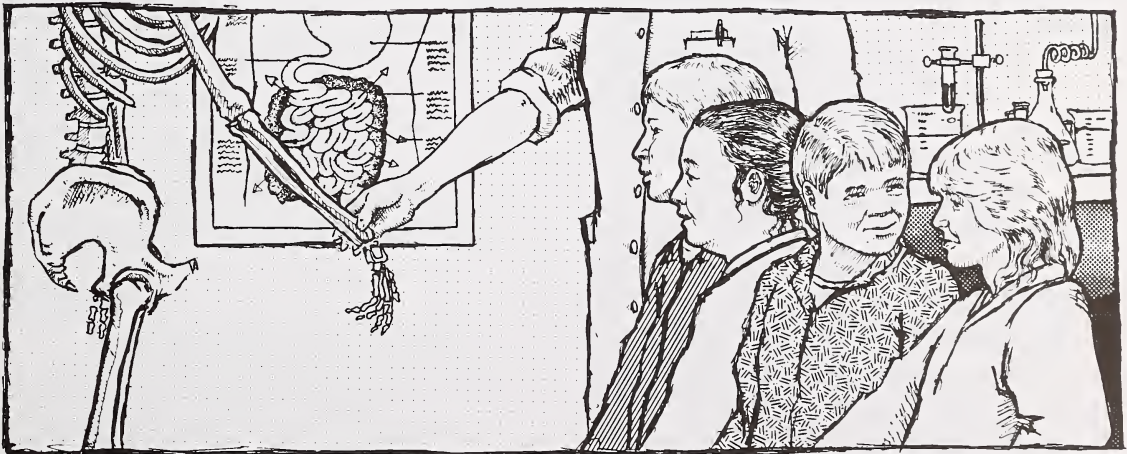
"But cousin Laura promised that when she qualified as a doctor and got a job she would show me her lab."

"I thought doctors worked in offices and saw patients," said Louis.

"Lots do," replied Chris, "but Laura is a different kind of doctor. She is specializing in finding out how the stomach and intestines work. She's finding out how they digest foods and why some people are allergic to different foods or can't digest them. Like my dad. He can't eat nuts. There is something in the nuts that makes him really ill."

CLUB 4 entered the next building and found the elevator.

"What floor Chris?" asked Mai Lin with her hand poised over the buttons.



"Four," replied Chris, "I remembered because it's the same as our club name."

The elevator doors opened and the four friends stepped out. The corridor was echoey and empty. "Now where?" asked Louis nervously. "This doesn't look as though we're supposed to be here."

Just then some white swing doors flew open and there stood a long haired girl in a white coat. "Good, there you are Chris. I thought I'd come and look for you. I'm Laura." She smiled at the others as Chris introduced them. "Come on in and I'll show you my lab. We don't have long as everyone starts work again at one o'clock."

The four children gasped with astonishment as they entered the lab. "It looks just like the mad professors on the films," muttered Louis and pointed to an array of glass tubes with liquid dripping into a container, and the skeleton hanging on the wall beside a giant poster showing the digestive tract.

Laura grinned. "Meet Charlie," she said, shaking the skeleton's bony finger. "He's what happens if you eat the wrong food."

"I hope you're joking," said Hanna.

"I am," replied Laura. "He's made of plastic. No matter what you eat, your bones won't turn to plastic."

"What are you working on, Laura?" asked Louis.

Laura pointed to the diagram of the digestive system. "That's what your insides look like, and no matter what you folks eat, your body digests and absorbs it. Inside your digestive tract you have solutions composed of enzymes. These are substances that break down food so that the body can absorb it into the blood stream. But some people have problems.

They may be missing some enzymes that are essential for their food to digest. We are working on ways to provide the enzymes that are missing."

Suddenly Laura turned to Chris. "What did you folks have for lunch?" she asked.

"Chow mein. Why?" replied Chris.

Laura pointed to the diagram. "OK, so figure out what's happening to it now."

With a bit of help, they did. Can you?

Lesson Activity

Curriculum Topic

What is the purpose of the digestive system?

Objectives

- 1) Students will understand the digestive process.
- 2) Students will try some simple experiments explaining different parts of the process.

Teacher's Note: The materials are intended to show the digestive process and not to show the human body as a machine, even though the digestive process includes some steps which are mechanical in nature.

Materials Needed

- The Nutrition Voyage Poster* (see photo section included with this resource)
- student copies of *The Nutrition Voyage* fact sheet
- student copies of the *Incredible Chow Mein Trek* worksheet
- coloured pens
- student copies of *Knights of the Kitchen Table Shield*
- equipment for demonstrations (see *Digestion Demonstration Instruction Sheet*)

Procedure

- 1) Give copies of *The Nutrition Voyage* fact sheet to each student. Pin up the classroom poster at the front so everyone can see it. Ask students to imagine they have eaten a mouthful of chow mein. Do they know what happens in their mouths? Take suggestions from

the class. (Teeth are used for chewing and biting, tongue moves food around, saliva wets it to help you swallow, etc.)

- 2) Explain that the digestive process starts with the mechanical action of chewing food in mouth (see note) and the first enzymes that break food down are found in the saliva. Show where some of the saliva that contains the first enzymes comes from.

3) Class Experiment

- a) Ask each student to swallow.
- b) Inside the mouth, roll the tongue under, to the base of the mouth until the tip feels a loose bump of skin.
- c) Press the tongue tip on that skin and hold it there for a slow count of six.
- d) Slightly release the tongue tip and feel a spurt of saliva.

- 4) Point out the esophagus on the chart. Demonstrate how the food moves down the esophagus in muscular waves. Set up and do the esophagus demonstration (see *Digestion Demonstration Instruction Sheet*).

- 6) Point out the stomach and explain it acts like a blender, churning the food around and adding more digestive juices full of enzymes. These break the food down so it is more easily absorbed. Set up the Protein Digestion Demonstration.

- 7) Do the Protein Digestion Demonstration.

- 8) Show the small intestines. Explain that the membrane wall of these

intestines allows the broken down food to be absorbed through it. Set up the Stomach Membrane Demonstration.

9) Do the Stomach Membrane Demonstration.

Follow Up

1) Give out the student copies of *The Incredible Chow Mein Trek*.

2) Have the students write down the result of the experiments on the worksheet.

3) As they finish, hand out their *Knights of the Kitchen Table Shield* and have the students fill in the ninth segment.

4) Collect the shields.

Digestion Demonstration Instruction Sheet

ESOPHAGUS DEMONSTRATION

Equipment needed:

straws and beads that fit snugly inside (one for every two students)

Procedure:

- a) Give each pair of students one straw and one bead.
- b) Students hold the straw horizontally and insert the bead at one end.
- c) They then take turns to squeeze the straw just behind the bead. This action moves the bead from one end to the other. This action shows how the muscles contract to move food down the esophagus.

PROTEIN DIGESTION DEMONSTRATION

TEACHER'S NOTE: Time will need to be allowed to check the results after one hour and again two hours after the first check.

Equipment Needed:

10 mL meat tenderizer
30 mL lemon juice
250 mL whole milk
glass bowl and spoon

Procedure:

- a) Dissolve 10 mL of meat tenderizer in 30 mL water. (Tenderizer is dried enzyme that breaks down protein. This is why it makes meat tender.)
 - b) Add this mixture to 250 mL of milk along with 30 mL lemon juice. (Lemon juice is an acid, like some of the acids in the stomach.)
 - c) Let it stand at room temperature.
- Observe the results after one hour and after three hours. (Food can take up to four hours to digest.)

STOMACH MEMBRANE DEMONSTRATION

Equipment Needed:

one egg
custard cups
5 mL liquid honey
15 mL water
small glass bowl, big enough to fit the egg inside
TesTape
tweezers

Procedure:

- a) Make a small hole, about the size of a dime in the small end of an egg and shake out the contents into a custard cup.
- b) Carefully rinse the inside of the egg with water.

- c) With tweezers, lightly crack the shell at the large end. Be careful not to tear the membrane.
- d) Use the tweezers to pick away the shell and leave the membrane exposed.
- e) Put 5 mL of honey in a paper cup. Mix in the 15 mL of water.
- f) Test this solution for sugar with TesTape. Note result.
- g) Fill the empty egg shell 2/3 full of water. Test this water with TesTape. Note result.
- h) Carefully place the eggshell containing water in the honey solution, large end down so that the exposed membrane is in the solution. Leave it overnight.
- i) Next day test the liquid in the shell with the TesTape. What is the result? WHY?

The Nutrition Voyage Fact Sheet

The Chewing Machine:

The **teeth** grind food into small pieces. The **tongue** helps move food around in the mouth. **Saliva** helps us swallow and it contains enzymes which begin to break carbohydrates down from starches into sugars.

The Esophagus:

As we swallow, food goes from the back of the throat into the esophagus. Muscle action called **peristalsis** pushes the food quickly down the esophagus into the stomach.

The Stomach Blender:

Gastric juices (we secrete 1.5 to 2.5 L per day) mix the food together, and break down protein and fat. Food stays in the stomach from 0.5 up to 5 hours. It is moved around the stomach mixing with gastric juices and forms a thick liquid called **chyme**. More peristalsis moves the chyme to the small intestine.

The

Small Intestine:

The small intestine is about 7 metres long and the inside wall is covered with tiny hollow projections called **villi**, so that the surface area is very large. (Food takes 2 to 9 hours to travel the 7 metre distance.) Enzymes from the pancreas complete the digestion of protein, fat and carbohydrates. Vitamins and minerals are released from the food mixture. By now, the mixture is thin and watery. The nutrients can pass right through the walls of the intestine into the blood stream. The blood carries nutrients to each cell, where they provide energy or their special function. The long nutrition voyage is over!

The Large Intestine:

Parts of the food our bodies don't need and can't use pass into the large intestine. From there, they are eliminated as waste.

The Incredible Chow Mein Trek

Name _____ Date _____

YOU are what you eat! Explain what happens to a mouthful of chow mein as it travels through the digestive system and becomes part of YOU!

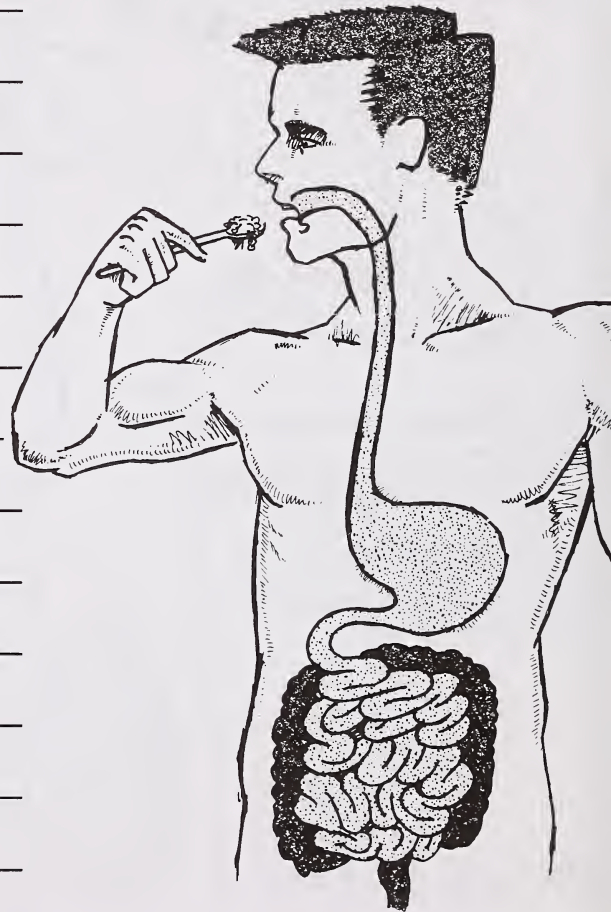
A. The chewing machine

B. The esophagus

C. The stomach blender

D. The small intestine

E. The large intestine



The Check Up

Curriculum Topic

Food and dental care

"Mom," asked Chris, "is fluoride a vitamin or a mineral?"

"It's a mineral," replied his mother.

"Why do you ask?"

"It's today I have to get my teeth checked and painted. We go this afternoon. Remember?"

There was a long silence.

"Chris, I'm sorry. I totally forgot your dental appointment was this afternoon." His mother sat down looking upset. "What am I going to do? I promised to drive into the city and pick your dad up at the airport at the same time." She looked at the clock. "It's too late to phone him and tell him to catch the bus. He'll be on his way."

"That's OK, Mom. I can go to the dentist myself. It's only two blocks away from school."

Chris and his mother looked at each other. "You won't be scared, going on your own?" asked his mother as she gave him a hug.

Chris grinned. "I don't mind a check up and having my teeth painted. That just gets me out of school early!" Then he frowned darkly. "As long as the dentist doesn't try and give me one of those superman rings. Those are for little kids. I'd rather have a sucker."

"Oh, Chris," laughed his mother. "The dentist doesn't give out suckers. She tells you NOT to eat candies."

"Right," said Chris. "I forgot. It's the doctor who gives out suckers. I

wonder why if it's bad for your teeth?"

"Maybe you should ask him next time you go," commented his mom.

Chris marched into the dentist's office right on the stroke of three o'clock.

"Hi there, Chris," said Dr Linda.

"Your mom phoned and said you were coming on your own this time. Hop in the chair and let me take a look in your mouth."

Chris opened wide while the dentist poked and prodded and squirted and scraped. Finally she was finished. "That's great, Chris. No cavities this time. What have you been doing differently, brushing well and eating the right things?"

"I guess so," said Chris. "My friends and I have a club called CLUB 4. It's a nutrition club and we try to follow Canada's Food Guide and not have too many other foods. Would that make a difference to my teeth?"

"Yes, it would indeed. The worst things for teeth are all those things called other foods. So if you eat a balanced diet, and drink milk that has lots of calcium, and keep away from sugars, your teeth stay strong and healthy. This is the first time you haven't had a cavity Chris. Now YOU can see the difference."

Dr Linda held up a mirror to Chris's mouth. Chris looked but all he saw was his same old teeth. "They don't look any different to me," he said.

Dr Linda laughed. "Chris, you're right. I guess I should have said 'You'll hear the difference.'" She flicked a switch and there was a high pitched whine.

Chris sat up suddenly. "Hey, that's the drill. But you said I had no cavities."

Dr Linda switched it off and patted his arm. "That's right. Now listen."

There was silence, with just a faint hum from the air conditioner. "That's what you hear with a good check up. The only sound is me saying 'Well done'."

Chris thought about it for a minute and then smiled. "You know, I've never had a perfect check up before. I guess eating the right things really does make a difference."

Lesson Activity

Curriculum Topic

Lifetime dental care

Objectives

1) Students will demonstrate their knowledge of dental care by doing the *Brush Up On Your Dental Health* worksheet.

2) Students will discover which foods are a good source of calcium.

Materials Needed

student copies of *Brush Up On Your Dental Health* worksheet
the *Food Bar Graphs*
student copies of the *Knights of the Kitchen Table Shield*
scissors
pins
a small red ribbon for each student

Procedure

1) Ask students what they should do to keep their teeth healthy.

2) Write their suggestions on the board.

3) Give out the *Brush Up On Your Dental Health* worksheet and let students work through it.

4) Give out the student copies *Knights of the Kitchen Table Shield*.

5) Have the students complete the final segment and cut out the shield.

6) With great fanfare announce that the students have now all completed their Knights of the Kitchen Table apprenticeship and it is your pleasure to make them fully fledged knights.

7) Have each child come forward.

Write the student's name on the shield and pin the shield and red ribbon on his or her chest.

8) Have the whole class stand and take the Knight's Oath of Allegiance.

KNIGHTS OF THE KITCHEN TABLE OATH OF ALLEGIANCE

As a Knight of the Table, I
solemnly swear,

To never skip breakfast, or get jam
in my hair.

I'll follow four food groups as long
as I'm able,

And never put my elbows on the
kitchen table.

Follow Up

1) Pin the *Food Bar Graphs* around the room.

2) Have the students look at them all to find the foods that are a good source of calcium.

ANSWERS TO BRUSH UP ON YOUR DENTAL HEALTH WORKSHEET

- 1) True
- 2) False
- 3) True - They stick to the teeth if eaten on their own. The greatly increased flow of saliva during a main meal will help neutralize the harmful acids that are formed in the mouth from the sugar.
- 4) False - Soft drinks contain more sugar and have no vitamins and minerals.
- 5) True
- 6) True - While chips do not cause cavities, they are an empty nutrient, high calorie food which can contribute to obesity.
- 7) True
- 8) True
- 9) False - You should go for regular checkups.
- 10) True

Brush Up On Your Dental Health

Name_____Date_____

At the end of each statement you will see the letter T for TRUE and F for FALSE. Circle whichever letter you think applies to the statement.

- 1) Cheddar cheese has a decay-slowng effect on teeth. T or F
- 2) If you brush your teeth three times a day you don't need to floss. T or F
- 3) It is better to eat sweets with a meal than between meals. T or F
- 4) Soft drinks and real juice with club soda are the same thing. T or F
- 5) Plaque combines with sugar to create an acid that attacks teeth. T or F
- 6) Potato chips are a better snack than chocolate bars. T or F
- 7) Peanuts do not cause cavities. T or F
- 8) If you cannot brush your teeth, eating an apple helps. T or F
- 9) You don't have to visit the dentist if you brush your teeth after every meal. T or F
- 10) Milk is a good source of calcium. T or F



Explore Nutritious Alberta

Grade 5

Checking it All Out

Curriculum Topic

Review of *Canada's Food Guide* and CLUB 4

TEACHER'S NOTE: This unit is called The Shopper's Apprentice, and will emphasize students learning to become wise and aware consumers.

Encourage students to do home activities to heighten their awareness of the world around them. Since this is the first lesson for Grade 5, re-introduce the concept of CLUB 4 using the poster and the information at the front of this binder.

Hanna and Chris coasted down the grocery store aisle. They were leaning over an empty grocery cart, with their feet off the ground. "Wheeeh," they chanted under their breath as the cart rolled rapidly under its own steam towards the far end of the store.

"Hanna, Chris, behave!" The children leaped off the cart guiltily as Mrs Bogart put out her hand and stopped its progress.

"YOU are supposed to be helping me," continued Hanna's mother with a twinkle in her eye. "Now, instead of mowing people down, take this half of the shopping list and use the cart for the job it's intended to do."

Stifling their giggles, Chris and Hanna took the list and studied it. To their amazement it wasn't very helpful.

"Er, Mrs Bogart," questioned Chris. "This list just says, 'fish, vegetables, fruit.' It doesn't say what kind of fish or other stuff you want."

Mrs Bogart smiled. "Sorry, I forgot. When I wrote the list I didn't know that you and Hanna would be helping me, so I just jotted down the categories of food

I needed. I wanted to see which varieties were on special."

"That's a good idea, Mom. Can we try that? We're two of the CLUB 4 kids so we should be able to make good choices. Can we?" asked Hanna. "Then we really will learn something about shopping."

Mrs Bogart looked at the two children. "OK," she agreed. "You two can be my shopping apprentices. Choose the fish first but if you find it too difficult come and find me and I'll write out more details. Remember to look for good nutritious food, without any other foods, and something that isn't too expensive."

Hanna and Chris went over to the fish freezer. There were all kinds of fish, fish and chips, fish cakes, fish sticks, whitefish, bluefish, salmon steaks, and even things like shrimp, lobster and crab. They looked at them doubtfully.

"How do you know which kind your mother wants?" said Chris.

Hanna looked puzzled. "I'm not sure. But this stuff doesn't look like the fish Mom usually gets. We don't eat things like fish cakes or fish sticks that have to be fried. And Mom doesn't buy boxes of fish and chips because it's cheaper to make them yourself. Besides, the batter is an other food."

"What about shrimp?" suggested Chris eagerly. "I like shrimps, especially on pizza."

Hanna shook her head. "We only have shrimp on special occasions because it's expensive."

"I wonder if there is any other kind of fish anywhere?" said Chris looking around.

"What about looking at the back of the store," said Hanna, pointing. "Isn't that the counter where they sell fish that isn't frozen?"

The friends walked over and looked. There were even more kinds of fresh fish and several dishes had the 'special' sign over them.

Hanna got very excited. "That's the sort of thing Mom gets," she said pointing to a whole fresh whitefish. "Mom says that whitefish is an Alberta fish that is good value. See, it's on special too. We can buy that whole fish for only four

dollars."

"How about the salmon?" asked Chris. "That's on special too." They looked at the price of the salmon. It cost 12 dollars. "Oh boy," said Chris, "that costs a lot more than the whitefish and it's not as big."

"Right. We'll get the whitefish," said Hanna. "I'm sure Mom will like that."

Mrs Bogart was delighted when she saw the fish choice that Hanna and Chris made.

"You really listened to me," she said. "The whitefish is nutritious and doesn't have any other foods like batter, and it's not very expensive. I couldn't have made a better choice myself. Now go and see what you can do with the vegetables."



Lesson Activity

Curriculum Topic

Using *Canada's Food Guide to Healthy Eating*

Objectives

1) Students will test their knowledge of *Canada's Food Guide* by answering questions, completing a worksheet and participating in a class discussion.

2) Students are introduced to the theme of the unit, and the concept of becoming a Shopper's Apprentice.

Materials Needed

student copies of *Canada's Food Guide - Fact or Fiction* worksheet
the *4 Food Groups Poster* (to be made)

student copies of *Canada's Food Guide*

student copies of *Shopper's Apprentice Certificate*

materials to make *Shopper's Apprentice* folders, or ready made folders (one for each student)

1 poster board

Procedure

1) Have the students make a *4 Food Groups Poster* from magazine pictures that have been cut out and placed in four sections on the poster board. This should be done in the shape of a rainbow to follow Canada's Food Guide. Give out the copies of *Canada's Food Guide* and allow the students to use them to refresh their memories.

2) Ask the following questions and discuss the answers:

Do you think that Hanna and Chris made a good choice? (Yes)

What food group does the whitefish belong to? (Meat and Alternatives)

What fish do you eat?

Is a whole whitefish a better choice than fish cakes or fish and chips? (Yes)

Why? (It has fewer calories because there are no added other foods such as fat and it costs less.)

3) Ask the students if they have ever had the chance to make the sort of choice Hanna and Chris made, or do they only shop with a specific list? Let them describe their experiences. (How do they make choices when buying treats? The same guidelines apply.)

4) Explain that this Grade 5 unit is based on becoming shopper's apprentices. (An apprentice is someone learning a trade or art under an experienced person.)

5) Their first task towards becoming a good shopper is to do the *Canada's Food Guide - Fact or Fiction* worksheet. Give out the worksheet and allow students time to complete it.

6) Have students exchange worksheets with a neighbour. Check and discuss each answer.

7) Give out the copies of the *Shopper's Apprentice Certificate*. Have the students write in their names and check off the first statement.

Follow Up

1) Have students make and decorate their *Shopper's Apprentice* folders.

2) Insert *Canada's Food Guide*, *Canada's Food Guide - Fact or Fiction* worksheet, and the *Shopper's Apprentice Certificate* as the first contents of the folder.

3) The folders should be kept at school as they will be used each week.

LESSON 1

Canada's Food Guide - Fact or Fiction

Name of _____

Shopper's Apprentice _____

Date _____

In each blank, indicate whether the following statements are fact or fiction. Be prepared to support each statement by providing an explanation with your answer.

1. *Canada's Food Guide* is a guide to assist young Canadians in choosing foods to supply their daily nutrient needs. _____

2. A 14 year old teenager has the same nutrient needs as a 10 year old student.

3. Teenagers must have three to four servings of milk products each day for skeletal development. _____

4. A physically active person can afford to eat more snacks than an inactive person.

5. You should eat the maximum number of servings recommended for each food group.

6. You will gain weight if you follow *Canada's Food Guide*. _____

7. You can eat frequently during the day and still follow the daily requirements of *Canada's Food Guide*. _____

8. You can eat 5-12 servings of cakes, cookies and doughnuts a day because they are grain products. _____

9. You can substitute peanut butter and soybeans for meat, fish, or poultry. _____

10. Variety, energy, balance and moderation are the key words to remember when using *Canada's Food Guide*. _____

Canada's Food Guide - Fact or Fiction Teacher's Information Sheet

1. *Canada's Food Guide* is intended as a guide to assist young Canadians in choosing foods to supply their daily nutrient needs.

(FICTION - It is a guide for ALL Canadians, not just the young.)

2. A 14 year old teenager has the same nutrient requirements as a 10 year old.

(FICTION - Nutrient needs are greater during the adolescent years because of the body's maturation and growth.)

3. Teenagers must have three to four servings of milk products each day for skeletal development.

(FACT)

4. A physically active person can afford to eat more snacks than an inactive person.

(FACT - The physically active person uses more energy than the inactive person. This means they burn off any extra snacks. However, it is still wise to choose nutritious snacks because you are establishing eating habits that will follow you throughout your life, especially when you are older and less active.)

5. You should eat the maximum number of recommended servings from each food group.

(FICTION - Adjust the number of servings to meet your lifestyle, energy and nutrient needs. An active teenage girl will want to eat the maximum number of servings

while an inactive 11 year old boy may want to eat the minimum recommended number of servings due to different body needs.)

6. You will gain weight if you follow *Canada's Food Guide*.

(FICTION - *Canada's Food Guide* does not contain other foods like chocolate, soft drinks and candy. If you choose foods from each food group that are low in fats and sugar, and follow a program of exercise, you will meet your daily nutrient requirements and lose or maintain weight.)

7. You can eat frequently during the day and still meet the daily requirements of *Canada's Food Guide*.

(FACT - If you are a small eater you may prefer to have your one cup milk portions spread over two snack periods at which time you consume half cup sizes. This is fine as long as you meet the minimum daily food serving requirement. *Canada's Food Guide* is designed to suit one's lifestyle whether you eat large or small meals.)

8. I can eat 5-12 servings of cakes, cookies and doughnuts a day because they are grain products.

(FICTION - These bakery products are NOT members of the grain products group because they contain large amounts of sugars and fats, making them unwise

choices. The nutrient recommendations for Canadians stress the need to limit the amounts of fat and sugar intake.)

9. I can substitute peanut butter and soybeans for meat, fish, or poultry.
(FACT - Peanut butter and soybeans are considered alternatives for this food group.)

10. Variety, energy, balance and moderation are the key words I should remember when using *Canada's Food Guide*.

(FACT - By choosing a variety from each food group in *Canada's Food Guide*, balancing food intake with energy output, and selecting foods low in fats, sugars and salt, you will be making a healthier YOU!)

Shopper's Apprentice Certificate



This certificate shows that

**has successfully completed the SHOPPER'S APPRENTICE COURSE
and is now a fully fledged shopper.**

CHECK WHEN COMPLETED

The Apprentice:

- | | |
|---|---|
| <input type="checkbox"/> 1) understands <i>Canada's Food Guide</i> . | <input type="checkbox"/> 6) can identify three advertising techniques. |
| <input type="checkbox"/> 2) can read food labels and understands how to get the most for his/her money. | <input type="checkbox"/> 7) has created a successful nutritious food advertisement. |
| <input type="checkbox"/> 3) knows several different names for sugar. | <input type="checkbox"/> 8) has completed the teeth trivia quiz. |
| <input type="checkbox"/> 4) knows what a balanced meal is. | <input type="checkbox"/> 9) helped choose and prepare food for a nutritious party. |
| <input type="checkbox"/> 5) understands input and output. | |

CONGRATULATIONS

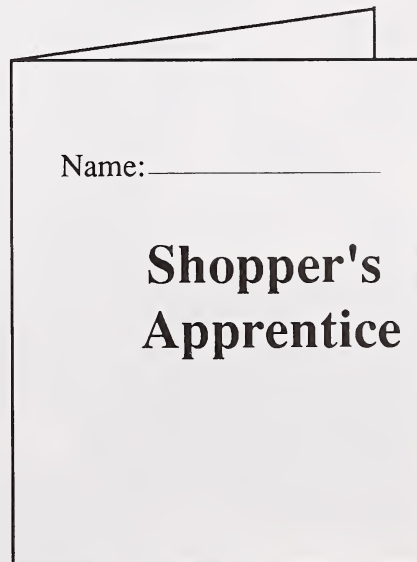
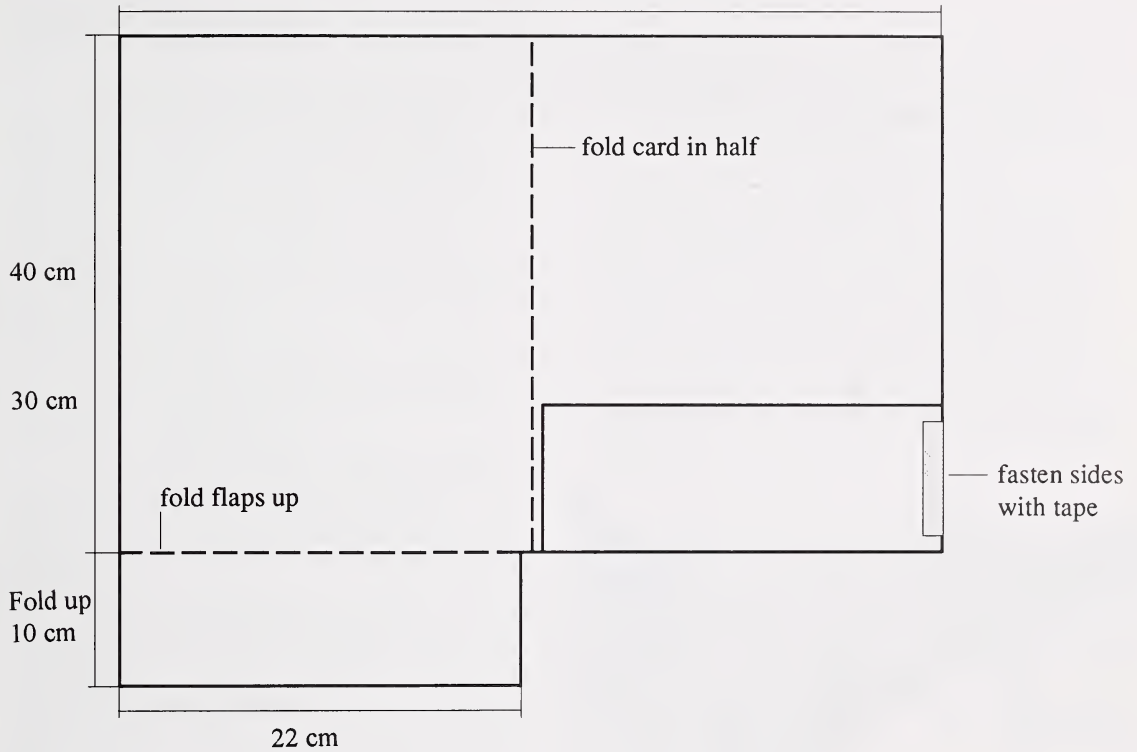
**YOU ARE NOW A FULLY FLEDGED
SHOPPER**

Signed by
Teacher _____

Date _____

LESSON 1

Shopper's Apprentice Folder



There's Only Peas in My Meat Pie

Curriculum Topic

Getting value for your money

Mai Lin was helping her father. She was working in the grocery store refilling the shelves. It was hard work. She had to wheel out the new boxes from the back room, slit them open, then carefully stack the contents on the shelves. Her father walked down the aisle to see how she was doing.

"You've done a good job Mai Lin. But I think you'd better quit now. What about your homework?"

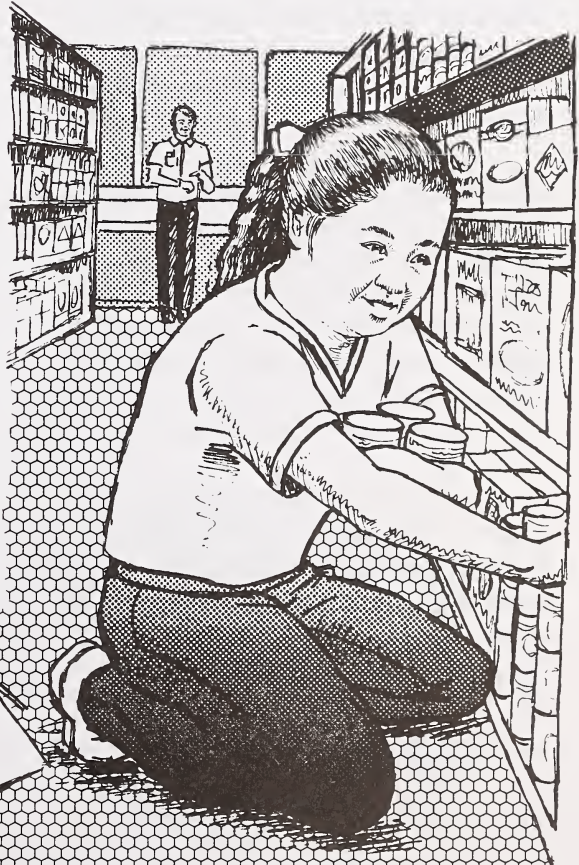
"I've done it, Dad," explained Mai Lin. "We only had math so I did it at lunch time. I'm hungry though. When's supper?"

Mr Lee looked at his watch. "Goodness, it's 6 o'clock already. No wonder you're hungry. Tell you what, instead of going home for supper tonight, let's eat here. Choose whatever you like from the store. We'll cook it in the microwave in my office and eat at my desk."

Mai Lin grinned. She loved it when they occasionally ate at the store. She'd wander around and choose something she had not tasted before. Besides, it was kind of fun trying to choose a meal that was nutritious, could

be cooked easily in the microwave, and eaten on the corner of her dad's desk.

She finished emptying the box she was working on, stacked it in the storeroom and wandered around looking for something to eat. There were lots of sandwiches in the cooler, but she'd had a packed lunch at school. There was meat and chicken in the freezer, but they were too difficult to cook at the store where they didn't have a stove or proper cooking dishes.



Then she spotted the frozen pre-cooked beef and vegetable pies. They looked good. There was a brightly coloured picture on the package showing a fork cutting through one. Two big pieces of meat, gravy and a few vegetables were falling out. "Mmmm!" Mai Lin's mouth started to water and her stomach rumbled. She gathered up two of the pies, then chose a couple of tomatoes, a small head of lettuce and some milk.

"There, that should do," she said and went to find the plates and cutlery in her dad's cupboard. She took the pies out of their wrappings and carefully placed them on a plate. Then she read the instructions for microwaving, set the timer and placed the pies in the oven.

Soon the small room was full of the smell of cooking. "Those smell good, Mai Lin." Her father came in and helped her slice the tomatoes and shred the lettuce. "They are a new line I haven't tried before. You'll have to tell me what you think."

Eventually the pies were done and Mai Lin and her father sat down to supper. Hungrily Mai Lin plunged her fork into the pie. Lots of gravy and peas fell out. She ate a mouthful and it was quite tasty. The next mouthful she got a piece of carrot and more peas with her gravy. The third mouthful, peas again!

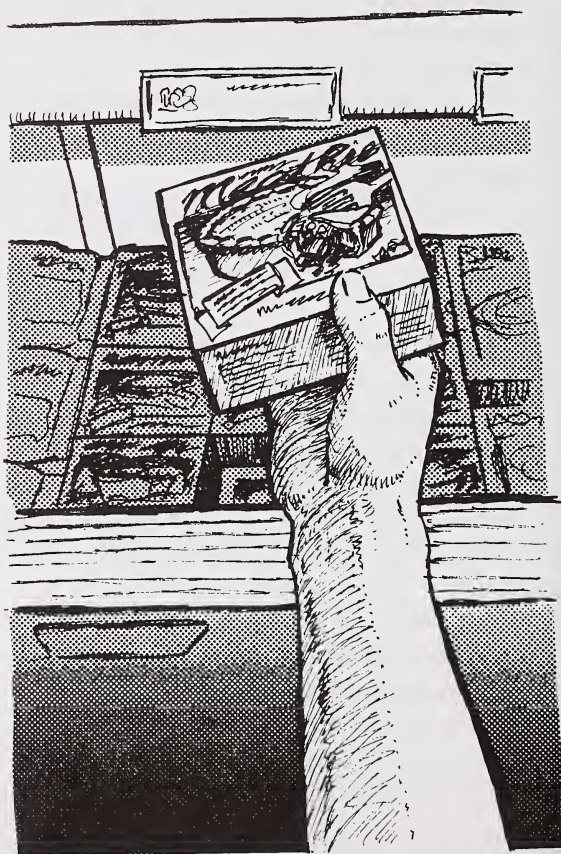
"Dad," she said. "There's only peas in my meat pie!"

Mr Lee poked his pie and looked inside. There were a couple of pieces of meat but mostly vegetables and gravy. He walked over to the package laying on top of the microwave, picked it up and read the side carefully. "I thought so. Look at this!" and he held out the side of the package with the list of ingredients.

Mai Lin carefully read the list aloud. "Pastry, gravy, peas, carrots,

potatoes, meat, seasoning, artificial colouring." She looked up at her father. "It says there is meat in it, Dad."

"Yes, but the ingredients are listed in order from the largest amount to the smallest. So in this pie the meat is actually not one of the main ingredients. There are more vegetables and gravy than meat."



"What a rip off," grumbled Mai Lin. "The picture on the box showed lots of meat."

"Yup, advertising is tricky," explained her father, "but as long as the meat is actually listed in the correct order, no one says how much meat has to be in a pie like this."

"You mean every time I buy something, I should read the list of ingredients first?" asked Mai Lin.

"You bet," replied her father, "or you never know what you are buying. You cannot rely on the pictures."

Mai Lin shook her head and poked the pie on her plate. "OK, next time I'll read the ingredients and make sure meat is number one when I buy a meat pie. And Dad...?"

Mr Lee looked up. "Yes?"

"Don't get any more of these."

"Done," said Mr Lee.

Lesson Activity

Curriculum Topic

Identification of ingredients

Objectives

- 1) Students will develop an awareness of the need to read food labels.
- 2) Students will practise reading labels to help them make nutritious food choices.

Materials Needed

student copies of *Getting Value For Your Money* worksheet

Shopper's Apprentice folders

Shopper's Apprentice Certificates

Procedure

1) Explain that as Shopper's Apprentices they have to read food labels. This is not always as easy as it sounds, because often the scientific name for an ingredient is given and it's hard to know what it means.

2) As an example, this is what the students might see if they read the ingredients on a package of hot dogs. List the following on the board:

BEEF, PORK, WATER, CHICKEN MEAT, CORN SYRUP, SALT, MUSTARD, DEXTROSE, SODIUM PYROPHOSPHATE, HYDROLYZED PLANT PROTEIN, SMOKE FLAVOURING, SODIUM ERYTHROBATE, FLAVOURINGS, GARLIC POWDER, SODIUM NITRITE, ARTIFICIAL COLOUR.

3) Tell the students not to worry

about the words they do not understand, but to look for the words they expect to see in a food, eg. in hot dogs they should expect some kind of meat. Remind them that the contents of food are listed in order of quantity.

4) Ask what order the meats are in. What is the third largest ingredient? Does that surprise them? Explain that all foods contain water, but added water can mean you are paying for water, not food.

5) Underline dextrose and corn syrup. Explain that these are both sugars. Is it good to buy foods high in sugars?

6) Briefly explain there are always other ingredients added for flavour and to help keep the food safe and preserve texture and colour. Products are often enriched with vitamins and minerals, a common practice in highly processed cereals and fruit drinks.

7) Have a class discussion on the importance of food labels. Do the students know what contents are in any of the food or snacks they buy? eg. gum, candy, ice cream, pop or juice, chips. For example, a chocolate bar label reads: sugar, corn syrup, skim milk powder, hydrogenated vegetable oil, cocoa, milk powder, ammonium salt of phosphorylated glyceride, salt, lecithin, dried egg white, hydrolyzed milk protein, artificial colour.

8) Distribute the *Getting Value For Your Money* worksheet. This is their first real test as Shopper's Apprentices. Have a quick discussion about what they understand from the title *Getting Value For Your Money* - paying for food that is nutritious instead of food that has little food value. For this worksheet they will be required to choose the most nutritious alternative from several food items whose cost is similar. Have students complete the worksheet.

9) Go over the worksheets and let students mark their own.

10) Have the students get out their *Shopper's Apprentice* folder and check off the second statement on the *Shopper's Apprentice Certificate*.

11) Have the students add their worksheets to their folders.

Follow Up

Either

Have students visit their local store and read the food labels on some of the things they wish to purchase. Then use this information to make wise choices.

Or

Go through the food cupboard at home. Read a variety of food labels. Note which foods are most nutritious.

Have the students list their findings and bring their lists to school to discuss. Then have them add the lists to their folders.

Answers to Getting Value for Your Money:

A) Orange juice is the wisest choice. Orange juice contains many nutrients without added sugar.

B) Hamburger with cheese and tomato is the wisest choice. All four food groups are represented.

C) An apple is the wisest choice. It costs less money than the fruit salad or strawberry pop treat. It has no added sugar and provides small amounts of several nutrients.

D) 2% milk is the wisest choice. It is least expensive and has no added sugar.

E) Cheese spread on celery is the wisest choice. It is dentally acceptable and nutritious. Cheese and crackers are also a wise choice, but would be even better with a whole grain or enriched cracker.

Getting Value for Your Money

Name _____ Date _____

IMAGINE YOU HAVE TO SHOP FOR YOUR LUNCH, BUT REMEMBER THAT THE BEST FOOD VALUE IS NOT ALWAYS THE CHEAPEST. LOOK CAREFULLY AT EACH SET OF CHOICES. CHECK THE LIST OF INGREDIENTS, THEN ANSWER THE QUESTION BENEATH.

REMEMBER: Ingredients are listed in order of quantity.

A) Here are three drink choices:

ORANGE JUICE - 45 cents

CONTENTS: concentrated orange juice, water, citric acid

ORANGE DRINK - 44 cents

CONTENTS: water, sugar, concentrated orange juice, citric acid, additives, food colour, vitamin C

ORANGE POP - 43 cents

CONTENTS: carbonated water, sugar, food colour, preservatives, flavouring

Which is the wisest choice? _____

Explain why this gives value for your money.

B) Here are three lunch choices. If you could choose only one, which would you have? Remember the Four Food Groups!

HAMBURGER WITH CHEESE AND TOMATO - \$1.60

CONTENTS: 100% fresh ground beef, processed cheese slice, tomato slice, lettuce leaf, vegetable oil, seasoning.

BUN: wheat flour, potato starch, water, yeast, lard, salt, preservatives

HOT DOG - \$1.39

CONTENTS: pork, beef byproducts, pork byproducts, water, artificial flavouring, smoke flavour. BUN: wheat flour, potato starch, water, yeast, lard, salt, preservatives

FRENCH FRIES WITH GRAVY (one serving) - 80 cents

CONTENTS: potatoes, vegetable oil, salt, preservatives. GRAVY: Water, caramel colouring, animal fats, spices, preservatives, artificial colour and flavour

Which is the wisest choice? _____

Explain why this gives value for your money.

How could you make this lunch a balanced meal?

C) Here are three dessert choices. Choose only one and remember about other foods.

STRAWBERRY POP TREAT - 60 cents

CONTENTS: enriched flour, sugar, strawberry jam, glucose, vegetable oil, icing sugar, coconut oil, additives, artificial flavouring and colour

APPLE - 30 cents

CONTENTS: apple

FRUIT SALAD (one serving) - 65 cents

CONTENTS: pears, peaches, water, sugar, pineapple, ascorbic acid, light syrup

Which is the wisest choice?

Explain why this gives value for your money.

D) Here are three milk choices. Choose only one.

2% MILK (one serving) - 75 cents

CONTENTS: milk containing 2% butterfat

CHOCOLATE MILKSHAKE (one serving) - 89 cents

CONTENTS: milk solids, sugar, glucose, cocoa, additives, powdered malt, salt, artificial colour and flavour

CHOCOLATE MILK (one serving) - 80 cents

CONTENTS: partly skimmed milk, milk solids, cocoa, sugar, preservatives, vitamins added

Which is the wisest choice?

Explain why this gives value for your money.

E) Here are three snack choices. Choose only one.

CHEESE NIBBLES (one serving) - 30 cents

CONTENTS: cornmeal, oils, additives, artificial flavour, salt, wheat flour, artificial colour, preservatives

CHEESE AND CRACKERS (one serving) - 30 cents

CONTENTS: cheesemilk solids, water, whey, corn syrup, preservatives.

CRACKERS: enriched flour, vegetable shortening, water, additives, and preservatives

CHEESE SPREAD ON CELERY (one serving) - 30 cents

CONTENTS: celery, cheesemilk solids, water, whey, corn syrup, preservatives.

Which is the wisest choice?

Explain why this gives value for your money.

What on Earth is Fructose?

Curriculum Topic

Different names for sugar

Louis was sorting his bubble gum cards. Chris was coming over in a few minutes and the two boys were going to trade. Louis sorted out his extras and laid them out on his bed where Chris could see them.

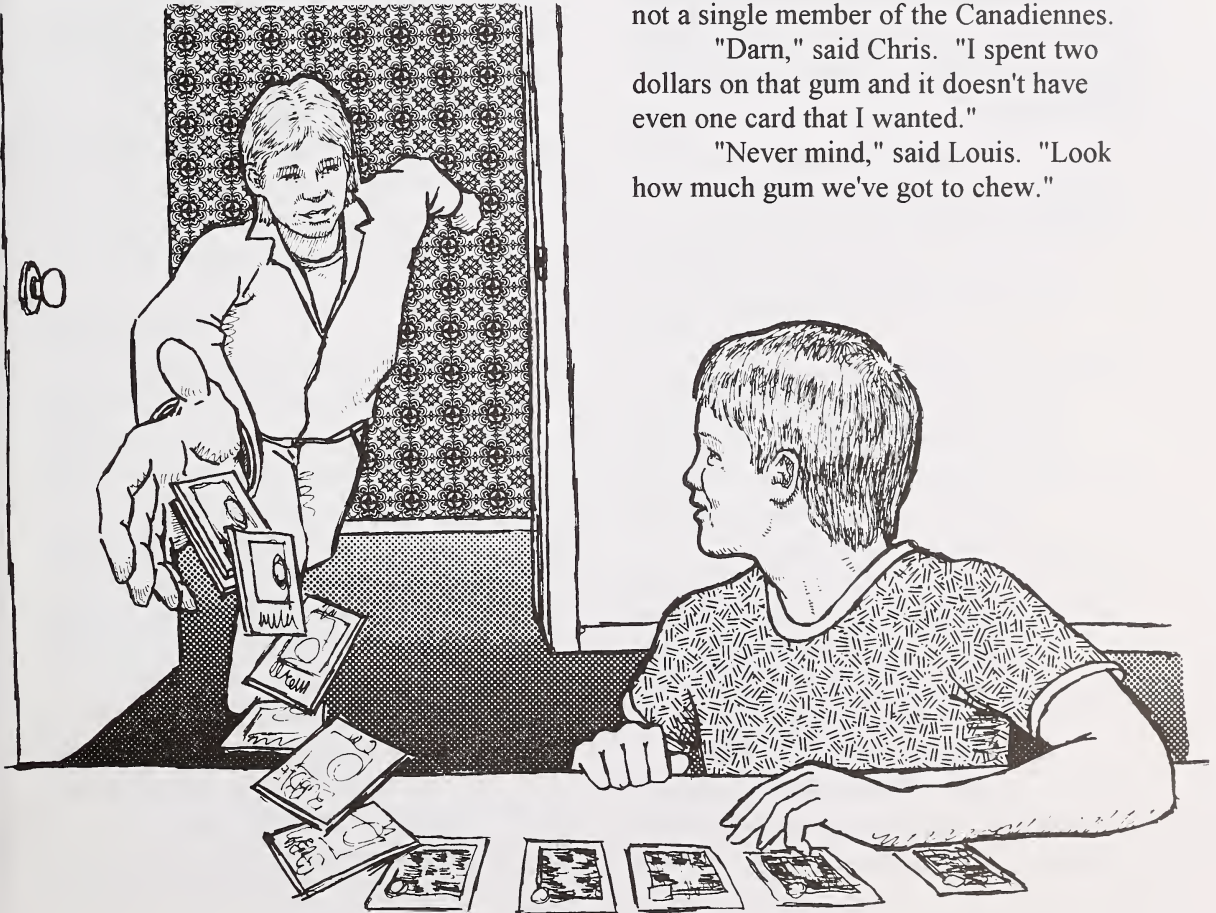
"Hey Louis." Chris rushed in excitedly and threw several packages of gum on the bed. "Quick, let's open these packages and see what cards we've got."

The kids at school told me this bubble gum has the new NHL teams inside. I've already found two players for the Canadiens. Let's see if there are any others."

The two boys sat down and soon there were bits of paper scattered all over the bedroom. There was a goalie for the Boston Bruins, two players from the Oilers, a defense player from Philadelphia, and another from the Calgary Flames, but not a single member of the Canadiens.

"Darn," said Chris. "I spent two dollars on that gum and it doesn't have even one card that I wanted."

"Never mind," said Louis. "Look how much gum we've got to chew."



Chris shook his head. "Nah-ah, I never chew bubble gum. It's got too much sugar in it. I only bought it because of the cards."

Louis rolled over, picked up a piece of the gum and stuck it in his mouth. "Mmm, you were right. This is really gross. It must be loaded with sugar," and he took it out of his mouth and pitched it in the waste basket. Then he leaned over and took one of the wrappers and smoothed it out. "Let's see how much sugar is in the stuff."

The two boys pored over the label.

"Sugar's listed here," said Chris, "but what's that fructose stuff?"

Louis looked at the word. "I guess that's sugar too. My mom told me there are lots of names for sugar and I think that fructose was one of them." He got up and found a dictionary. Together they looked up the word.

"Yup," continued Louis pointing to the dictionary. "It says here that fructose is a very sweet sugar occurring in honey, fruit etc." He closed the dictionary and looked at Chris. "I guess that makes sense. This bubble gum is fruit flavoured, so they made it very sweet. Oh well. What are you going to do with it all, Chris?"

Chris gathered up the pieces of gum and wrapping papers and looked at them mournfully. "I dunno," he muttered. "Seems like a waste to throw them out. Guess I shouldn't have bought it."

"I guess not," Louis agreed. "I wonder why it's only the gums with sugar that have hockey cards?"

"Dad says it's because the makers want you to buy it even though it's not good for your teeth," Chris said. Then he grinned as he pitched all the gum and wrappers in the garbage. "Guess it worked. But I've learned. I won't get it next time!!!"

Lesson Activity

Curriculum Topic

Identification of ingredients

Objectives

- 1) Students will recognize some of the different names for sugar.
- 2) Students will create a dictionary containing the different names for sugar.

Materials Needed

- as many different gum wrappers as students can collect
- one dictionary per student
- one sheet of lined paper per student
- pencils or pens
- four large index cards
- small box of sugar cubes
- Shopper's Apprentice* folders
- Shopper's Apprentice Certificates*

Procedure

- 1) Begin the lesson by asking the class why it is not a good idea to eat too much sugar. (eg. increased risk of tooth decay, obesity, heart disease, diabetes).
- 2) Give the class some of these interesting facts about sugar:
The average Canadian consumes about 50 kilograms of sugar in a year - that's the equivalent of 1 kilogram a week.
Some of this sugar will be in its pure form and the rest will be found in a processed form in foods like cereals, soft drinks, ketchup, and baked goods.
A certain amount of sugar is necessary for energy but one kilogram a week per Canadian may be too much.

3) Ask what happens to excess sugar in our bodies? (Any excess sugar is converted to fat.)

4) Play a guessing game with the class.

a) On individual cards, write the name of one of the following foods. On the reverse, write the number of sugar cubes which represents the amount of sugar in that food:

1 slice of iced cake (12 cubes)

1 serving (250 mL) of chocolate milk (7 cubes)

1 glazed doughnut (6 cubes)

1 serving (125 mL) jelly dessert (5 cubes)

b) Empty the box of sugar cubes on to the desk.

c) Explain that one sugar cube equals 5mL.

d) Choose four volunteers to come up one at a time and guess how much sugar is in one of the foods. Have the volunteer place the appropriate number of sugar cubes on the card. Discuss.

5) Explain that sometimes sugar is difficult to detect when reading ingredient labels because it has many different forms and names. If we are to control our consumption of sugar we must be able to recognize its varied names.

6) Explain that gum (not the sugarless variety) is full of sugar. Give out one gum wrapper to each student and let them read it. See how many contain

the word sugar. Where on the list is sugar placed? What does this mean? (Ingredients are listed in descending order of proportion, with the largest weight or volume listed first.)

7) Hand out lined paper and a dictionary to every student.

8) Write the following names on the board. They are all the names of different kinds of sugars commonly found in food. Many sugars have the 'ose' ending on the word. See if any of these names, or combinations of these names, are present on the gum wrappers:

honey, molasses, brown sugar, corn syrup, maple syrup, dextrose, maltose, lactose, fructose, invert sugar, glucose, sugar, sucrose, lactose, galactose

9) Using their paper, have students organize the list into alphabetical order and look up each name in their dictionary. Write down the meaning. While students are making their sugar dictionaries circulate and help with problems.

10) Have the students get out their *Shopper's Apprentice* folders and check off the third statement on the *Shopper's Apprentice Certificate*.

11) Place the sugar dictionary in the *Shopper's Apprentice* folder.

Follow Up

Divide the class into teams and hold a spelling bee using the different names for sugar.

What If?

Curriculum Topic

Balanced meals

"WHEEEeee, lookout, WHOOOPS," yelled the CLUB 4 kids as they swooped down the hill on Chris' toboggan.

The toboggan went faster and faster, then hit a bump, ran off to the side and tipped the children into a snow drift.

They all lay on top of each other, shrieking with laughter.

"Hey, let me up," gasped Mai Lin who was on the bottom of the heap. "I can't breathe and my mouth is full of snow."

With a convulsive jerk she heaved herself out from under the others and lay on her back looking up at the sky. Snowflakes gently drifted down and she stuck out her tongue to catch one.

"Wouldn't it be lovely if you could really taste snowflakes - if they were mint flavoured or something?" she asked.

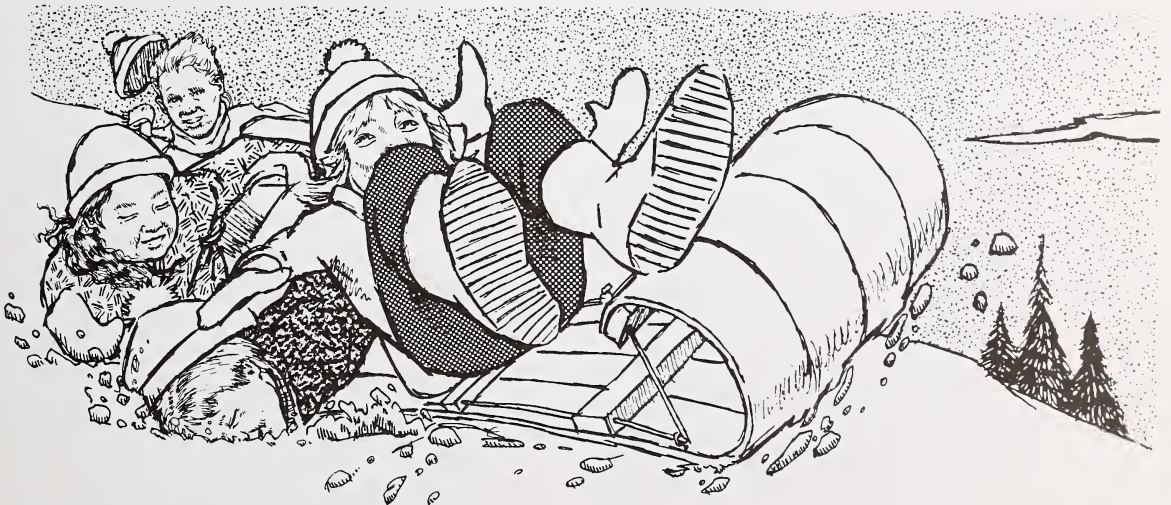
Hanna, Louis and Chris rolled over in the snow and looked up.

"I think they should taste more like mashed potatoes," remarked Louis as he opened his mouth to let the snow drift in. "Yuk," chorused Hanna and Chris.

"But it would be fun if the weather really did rain different kinds of food!" added Chris. "Then we could go around and eat what we liked and it wouldn't cost anything."

"What do you mean?" asked Hanna.

"Well, what if the river was apple juice, and it snowed mashed potatoes. Then maybe it could rain meatballs one day and hail hard boiled eggs the next."



Everyone laughed. "You'd need a crash helmet then," commented Louis, "and if it started to rain gravy, you'd slip all over the place."

"It would be worse if it stormed fish" grinned Hanna. "What a stink if no one cleaned up for a couple of days."

"Mmm, cup cake trees, spaghetti orchards, jelly grass and houses hollowed out of giant loaves of bread," imagined Mai Lin dreamily. "And we'd just lie around and eat whatever was handiest."

"And all become as fat as pigs," laughed Hanna, tickling Mai Lin.

"I wonder if people would still eat balanced meals if the world was like that?" said Mai Lin as they all stood up and started for home.

"I dunno," replied Louis. What do YOU think?

Questions to Class: IF FOOD WAS AVAILABLE EVERYWHERE, WOULD PEOPLE EAT BALANCED MEALS? WHY OR WHY NOT?



Lesson Activity

Curriculum Topic

Planning balanced meals

Objective

Students will show their understanding of guidelines for healthy meal planning by giving advice to each other.

Materials Needed

two sheets of paper and a pen for each student

large cardboard box

Canada's Food Guide from the *Shopper's Apprentice* folder

Shopper's Apprentice Certificate

Procedure

1) Ask how many students know about Ann Landers' advice column (or any other advice column).

2) Explain that the students will send a letter about a meal problem to Nutricia Nut, a nutrition advice columnist. Then, the students will demonstrate how much they know about planning balanced meals by responding to one of their classmates' letters for Nutricia Nut. Give examples of problems:

a) I need a quick nutritious breakfast so I won't be late for school.

b) What can I pack in my lunch for a field trip on a cold day?

c) Can you suggest a nutritious snack for my favourite valentine?

3) Have students write letters and sign them with a fictitious name. The letters are then posted in a big box and

shaken up.

4) The letters are randomly given out again. This time each student must answer the letter in the persona of Nutricia Nut. They must use their knowledge of *Canada's Food Guide* to give the best possible answer to the questions.

5) Ask some students to read the question and their answers.

6) Have the students get out their *Shopper's Apprentice* folders and file the letters with the answers. Check off the fourth statement on the certificate.

Follow Up

1) Students draw a picture of the world similar to that imagined by CLUB 4, with food weather, cup cake trees, etc. Draw themselves in the picture eating a balanced meal chosen from the food surrounding them.

2) Have students create the "fastest sandwich in the west". By using prepared fillings the students have timed competitions to determine who made the fastest sandwich. The sandwich must contain at least 3 food groups. Bread ideas: tortilla flour shells, taco shells, hot dog buns, whole wheat bread, kaiser buns, pita bread. Filling ideas: bananas, peanut butter, meat slices, tuna or salmon, hard boiled egg, turkey, chicken diced, shredded cheeses, diced tomatoes, shredded lettuce (try different kinds), sliced green peppers, diced onions, pickles, cucumbers, alfalfa sprouts.

Hanna's Uncle

Curriculum Topic

Energy in and energy out

CLUB 4 were waiting at Hanna's house. They were all excited and kept rushing to the window whenever a car drove past.

"Oh boy. He'll never come," moaned Louis.

"Yes he will," argued Hanna. "If Uncle Don says he'll be here today, he'll be here. Anyway it's a long drive from Saskatchewan and he said he'd arrive just before supper. It's four o'clock so he could be here any time."

"I've never met a professional football player," said Mai Lin. "What's he like, Hanna?"

"He's nice but he's big, real big," Hanna grinned. "Mom says it's like having the jolly green giant around the house."

"Aw come on," argued Chris. "How big's real big?"

"Bout 195 cm," replied Hanna. Everyone looked at her in amazement.

"Wheee," whistled Louis, "that's BIG. That's even bigger than Big Mike."

Just then a camper truck drove into the driveway. "He's here," everyone yelled, and rushed out to greet Hanna's Uncle Don.

After supper CLUB 4 were able to sit down and talk to Uncle Don. They had lots of questions about playing for the Saskatchewan Roughriders and how he kept fit.

"You look real tough," said Louis admiringly. "What do you do for

training?"

Don stretched out his arms, grabbed Louis around the waist and hoisted him high in the air. "I lift weights," he grinned, and dropped Louis back on the floor again. "That's for strengthening my muscles. I also play racquetball for agility and a good work out; and I jog and sprint to keep up my running speed. I do at least two hours of exercise a day."

Mai Lin looked amazed. "But it's not the football season yet."

"No, it's not," agreed Don, "but I have to keep fit in the off season or I wouldn't get picked again in the next tryouts. As it gets nearer to the tryouts I do more and more exercising so that I am really fit."

"I'd love to play football," said Chris longingly. "I'm going to eat loads of steak and potatoes so I'll grow fast."

"Hold on there, young 'un," laughed Don. "Don't overeat - that's the wrong thing to do. It just makes you sluggish. Eat well balanced meals and do lots of exercising. Join a gym club or weight lifting club when you get a bit older. That will help develop your muscles. Just eating steak and potatoes won't do a thing for you."

"I like football too. Do you think girls will ever play on professional teams?" asked Mai Lin.

Don shook his head. "I kind of doubt it," he said, "not because they

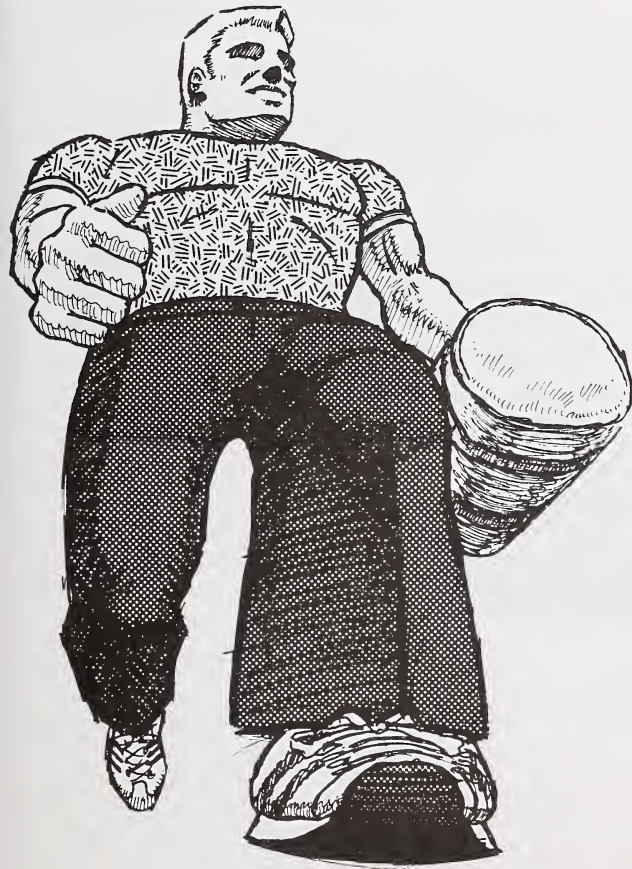
couldn't train and be fast and strong, but most girls just don't grow as tall as the professional football players. All my team are over 180 cm tall and weigh 90 to 115 kg. I don't think I've ever seen a woman with that build."

"But suppose there was?" said Hanna.

"Then I guess they could try out," said Don and dug his hand in his pocket and brought out some tickets. "Look, you guys, it might not be football season, but how many of you would like to come to the baseball game with me?"

He was deafened by the noise as everyone jumped on him shouting their approval.

"Pheew," said Hanna's mother after they had all left. "It's worse than having the jolly green giant here. It's like living in the middle of a fairground."



Lesson Activity

Curriculum Topic

Choosing food wisely: energy in - energy out

Objective

Students will summarize good eating and exercising regimens by role playing athletes with these qualities.

Materials Needed

the six athletic pictures and profiles
student copies of athletic profiles

Note: You may need to explain the significance of the "Special Olympics" to students.

Shopper's Apprentice Certificates
Shopper's Apprentice folders

Procedure

1) Discuss with the class why we need to be physically active. (Our bodies are designed for action. The more we exercise the better our blood circulation and our sense of well being. Exercise burns calories to help us regulate our body weight. Exercise and fresh air helps us sleep better.)

2) Place the athletic profiles and portraits in an area for general class viewing and comment about each one. Note the age range - from school age to senior citizen. One doesn't have to be young to be fit!

3) Divide students into pairs and hand out the copies of the athletic profiles. Allow them five minutes to read the profiles and become familiar with them.

4) In each pair, one student will be the interviewer and the other student will roleplay the athlete. The interviewer must ask questions about the lifestyle, eating and exercise habits of the athlete. The athlete must answer using the information provided.

5) When the students are finished, have each of the profiles presented to the class by one of the pairs.

6) Have students take out their folders and check off the fifth statement on the *Shopper's Apprentice Certificate*.

Follow Up

Have each student, or small groups of students, design and instruct the rest of the class in an exercise that can be done in the classroom. The exercise should be at least 3 minutes in length.

An example would be crossing your arms over your chest and then raising and lowering yourself from a chair. This is done to music with a strong fast beat. One beat for up and one for down. Do this for 3 minutes.



ATHLETIC PROFILE

Janet Shulha - Heptathlon Athlete

Age: Mid - twenties

Occupation: Technical director of the Edmonton Track and Field Association, former heptathlon athlete

Athletic Activity: The heptathlon involves completion of the following seven events: shotput, high jump, long jump, javelin throw, 200 m, 400 m and 800 m sprints.

Family: Married, no children

Favourite Foods in Each Food Group:

Grain Products: Whole wheat bread

Vegetables and Fruit: Melons, oranges and grapes

Meat and Alternatives: I enjoy chicken in many forms but I always eat it skinless to avoid extra calories. Poultry skin is high in calories because of the fat.

Milk Products: I cannot drink milk when I take the special medication for my asthma. I eat cheese in order to make up some of my milk product servings.

Favourite Activity: I take an aerobic dance class three or four times a week so I can keep my lungs and heart rate in top form.

Pet Peeve: Smokers and overeaters

Favourite Quick Breakfast: When I was training I ate a very light breakfast because it is very difficult to train with a full stomach. My favourite was yogurt and fresh fruit.

Favourite Drink: Water to replace body fluids lost during strenuous exercise

Favourite Snack: Fruit and cheese are quick to prepare and very nutritious.

Input-Output: When I was training with weights to increase my muscle strength, I ate maximum amounts of protein. I also had to drink a great deal of water to replace water lost when my body perspired. Juice and pop have unnecessary calories and didn't agree with me as well as water. Now that I am a retired athlete, I watch what I eat, follow the minimum requirements of the food guide, and play sports like squash and aerobic exercise.



Gina Capjack- Figure Skater

Age: 15

Occupation: Student

Athletic Activity: Figure skater

Family: Mom, Dad, and a younger sister

Favourite Foods in Each Food Group:

Grain Products: Buckwheat pancakes

Vegetables and Fruit: Fresh strawberries, especially on pancakes

Meat and Alternatives: Chicken prepared any way

Milk Products: 2% milk that's really cold

Favourite Activity: I like land training which I do off the ice. It involves running, sprinting and circuit training. Circuit training consists of a series of leg and jumping exercises which build up muscle power and flexibility.

Pet Peeve: I don't like the chocolate and potato chips that are available in vending machines at the arena. I am amazed at how many people eat that stuff. I usually bring something nutritious from home.

Favourite Quick Breakfast: I eat lightly before training at 6 a.m. because if I overeat I become sluggish. I like orange juice and muffins.

Favourite Drink: Gatorade is a good thirst quencher. It clears up dryness of the mouth that occurs because of strenuous skating.

Favourite Snack: My mom makes

fruit and granola bars which have less sugar in them than the ones bought in the store.

Input-Output: I train four hours a day, seven days a week. I have to make sure I maintain my body weight with this kind of schedule. I eat three big meals and have a few nutritious snacks after school before I go on the ice. I must also drink plenty of water to replace lost body fluids.



Patricia Lancaster - Fitness Enthusiast

Age: 73

Occupation: Retired but active with the Alberta Senior Citizen Recreation and Sports Association

Athletic Activity: I enjoy being active. I go for a brisk walk every day, and I also golf, curl, cross-country and downhill ski. My husband and I work out every morning using the television workout programs.

Family: Husband, two adult children, and four grandchildren

Favourite Foods in Each Food Group:

Grain Products: Dry cereals without preservatives and porridge

Vegetables and Fruit: We love fruit for dessert and we eat more vegetables than meat. I cannot think of any I don't like.

Meat and Alternatives: Beans and lentils

Milk Products: I like 2 % milk, but my husband drinks skim milk to reduce his fat intake.

Favourite Activity: I really can't decide. I have recently taken up rhythmic gymnastics which is a less strenuous form of gymnastics. It involves athletic and dance movements to music that may be coordinated with swinging ribbons and banners.

Pet Peeve: Smoke is so annoying. I even quit my bridge club because I couldn't stand to see those people killing

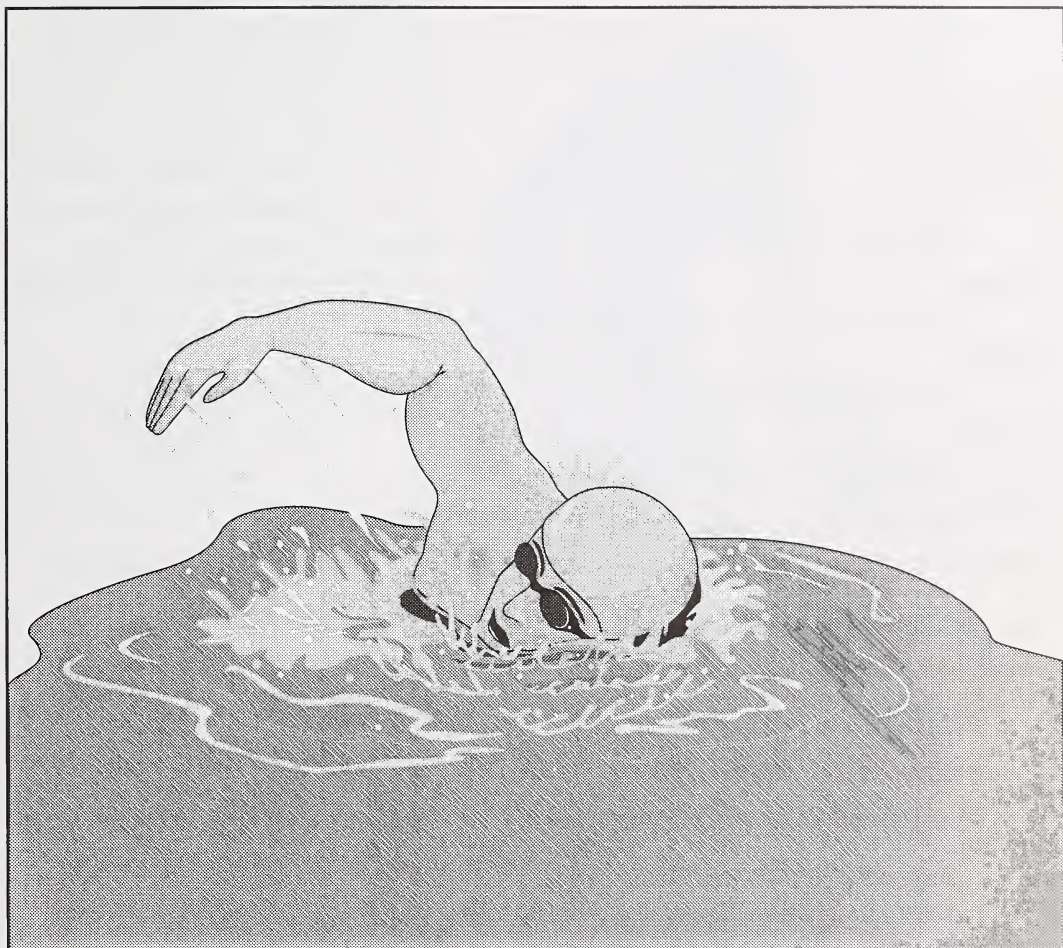
themselves and I can't stand second hand smoke.

Favourite Quick Breakfast: I like meal-in-a-glass which I learned to make at our health club. It contains eggs, milk, nuts and bananas.

Favourite Drink: Weak postum drink

Favourite Snack: Dried banana chips, carrot sticks, and nuts are great for nibbling when you're on the run.

Input-Output: Now that I'm older, I eat less because my metabolism doesn't work as quickly. When I eat a heavy meal or a rich dessert I make up for it by doing more exercise. Exercise is just as important as what you eat, so I try and keep a balance between the two. I have been able to maintain my weight by always losing the extra weight when I have gained three pounds. Three pounds is a lot easier to lose than 25! Do everything in moderation. Be flexible by doing a variety of exercises.



Larry Schulhauser - Competitive Swimmer

Age: Mid-twenties

Occupation: University student

Athletic Activity: Competitive swimmer specializing in the 200 m breaststroke, 100 m butterfly, and 100 m breaststroke

Family: Single

Favourite Foods in Each Food

Group:

Grain Products: Whole wheat bagels

Vegetables and Fruit: Mandarin oranges

Meat and Alternatives: Chicken, shrimp, lobster, and barbecued salmon

Milk Products: Milk and every kind of ice cream

Favourite Activity: I enjoy any kind of water play especially sailing and water polo. I would like to learn how to wind surf.

Pet Peeve: I have a tendency to gain weight when I am not training because I eat as much as I do when I am training.

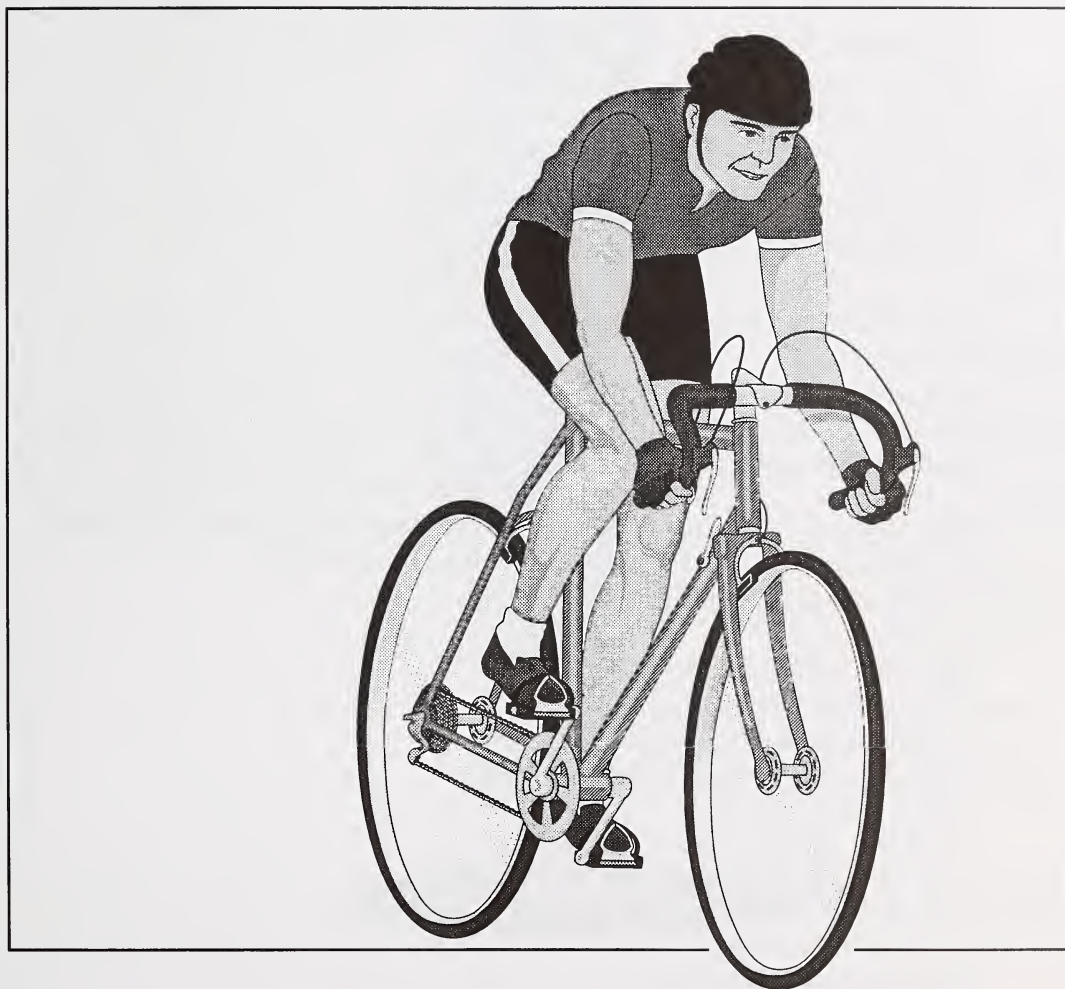
Favourite Quick Breakfast: I eat french toast after a strenuous early morning workout. It makes me queasy if I eat it before morning training.

Favourite Drink: Milk

Favourite Snack: An apple or an orange

Input-Output: When I am not in training I have to watch my weight. During training you have to eat lots of

carbohydrates like grain products in order to have energy for the hard exercise. I'm trying to learn to balance eating the right amounts of food to suit the amount of exercise I do. My mom has encouraged me to take raw vegetables instead of a second meat sandwich in my lunch on the days when I am not in training. I also try to walk more and golf when the weather permits.



Patrick McLaughlin - Cyclist

Age: 18

Occupation: Student

Athletic Activity: I am a competitive cyclist who has competed in the Giovanni Caboto Criterium and the Palm Dairy Classic.

Family: Parents and three brothers

Favourite Foods in Each Food

Group:

Grain Products: Pasta, spaghetti (with meat sauce)

Vegetables and Fruit: Pear apples (the hybrid fruit) and watermelon

Meat and Alternatives: Moose steak

Milk Products: As a cyclist I have to watch my calcium intake, so I eat plain yogurt. I make sure I have enough to keep my bones strong.

Favourite Activity: I like volleyball because jumping strengthens my legs. I play ice hockey just for fun and I also played six years of soccer before I started serious cyclist training.

Pet Peeve: Motorists who are inconsiderate of cyclists annoy me, especially those who come up behind and honk the horn.

Favourite Quick Breakfast: Omelet with jam

Favourite Drink: Apple juice

Favourite Snack: Cheese sandwiches and bananas are easily transportable during competition and are

nutritious. I usually carry one of each in the pocket of my cycling jersey.

Input-Output: During the winter months it is very easy for me to lose strength and stamina because I am not cycling. I keep up training by doing exercises with weights attached to my arms and feet and I do lunges and squats to strengthen my thighs. I also work out on a trainer. I attach the back wheel of my bike to it and it's just like I was out on the open road. The trainer even has a wind machine attached to it so that riding the bike is as realistic as possible. I try and steer clear of other foods and eat only nutritious food so that my body stays adequately fuelled.



ATHLETIC PROFILE

Heather Scruton - Runner

Age: 13

Occupation: Student

Athletic Activity: I am a Special Olympic track and field Runner who placed second in the National Special Olympics held in Calgary. I competed in the 100m, 400m, 1 km and 4 km events.

Family: Mother, father, sister and a dog

Favourite Foods in Each Food Group:

Grain Products: Pastas, particularly shell pasta and macaroni and cheese

Vegetables and Fruit: Seedless green grapes and corn

Meat and Alternatives: Any kind of beef and hot dogs

Milk Products: I don't like milk but I eat a lot of low fat fruit yogurt.

Favourite Activity: Sports of course!

Pet Peeve: Fat on meat and having to go to bed early

Favourite Quick Breakfast: Apple juice and waffles with fresh fruit

Favourite Drink: Apple or raspberry juice

Favourite Snack: Perogies with cheddar cheese

Input-Output: I'm small and light - that's why I move fast. I like eating but I do lots of active things. I love gym. At home Mom and Dad gave me a rebounder.

That's fun. We also have an exercise bike down in the basement. I don't worry about my weight.

Cartoon Time

Curriculum Topic

Advertising

CLUB 4 were sprawled over Chris' family room floor. It was Saturday morning and they were watching a Bugs Bunny cartoon.

The cartoon finished and a candy bar commercial started.

"I'm hungry," said Chris, stretching and lumbering to his feet. "Let's go and see what there is for breakfast."

Another commercial started and Hanna sang along under her breath. "Just can't miss those sugary crisps, sugary crisps, sugary crisps."

"How about some cereal?" asked Louis. "What have you got?"

Mai Lin laughed. "Do you guys realize that whatever was advertised on

TV was what you talked about?"

"Did not," said Chris indignantly.

"I just felt hungry."

"Sure you did," said Mai Lin. "But you didn't feel hungry until that commercial for the candy bars came on. Then they advertised a sugary cereal and Hanna started singing along and you boys asked about breakfast cereal."

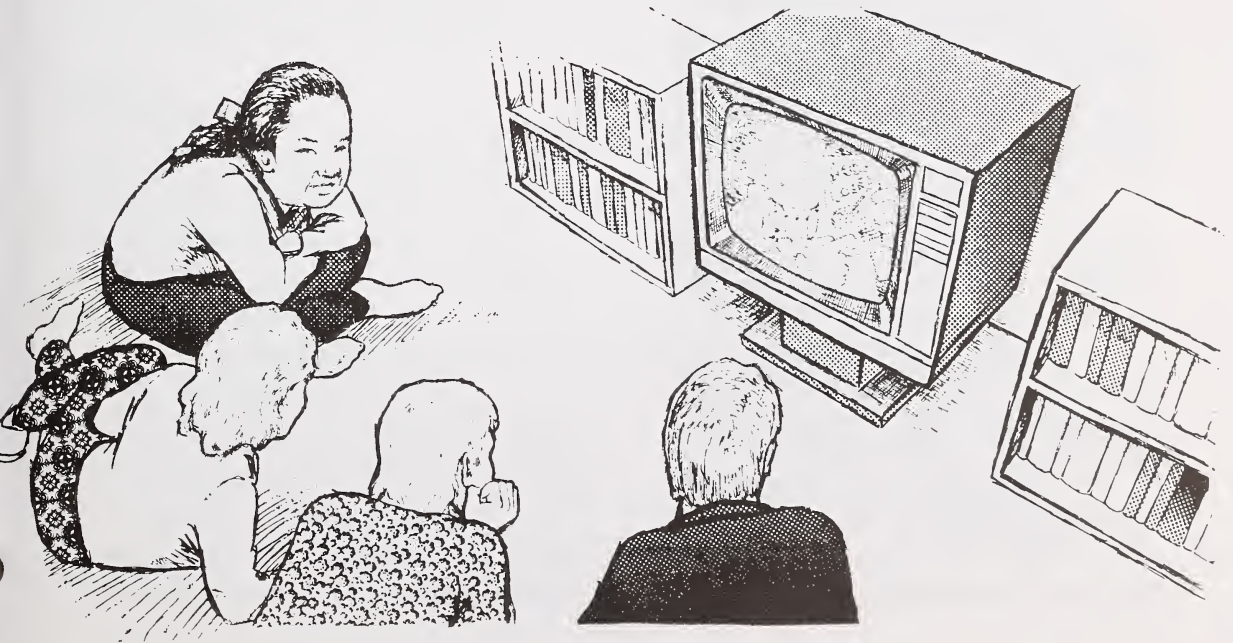
The other three members of CLUB 4 looked at Mai Lin in amazement.

"Is that really what happened?" asked Chris.

Mai Lin nodded.

"I didn't even realize I was singing along," remarked Hanna.

"Why were you watching us and not the TV, Mai Lin?" asked Louis curiously.



"It's my dad's fault," explained Mai Lin. "Because Dad has the grocery store, he's always talking about the best way of advertising and how it helps sell products. He taught me to watch out for advertising because it sometimes influences you when it shouldn't, 'specially on TV. Sometimes the TV commercials make Dad really mad. He told me to watch what happens on Saturday mornings."

"Nothing happens on Saturday mornings," said Louis. "It's just the same old commercials."

Mai Lin shook her head. "But it's not. You watch. During cartoon time when lots of kids are watching, you see commercials for candy and breakfast cereal and lots of toys."

The four friends watched the next set of commercials. Sure enough there was a commercial for a candy bar, followed by one for a pop drink, a teen doll commercial and one for transformers.

"Hey, TV is trying to sell stuff to kids. I never realized," said Chris. "That's not really fair."

"And the same thing happens at other times," added Mai Lin. "During the daily talk shows and the afternoon soaps when they think mainly women watch, they have silly commercials about women doing the washing and using make up."

"Yeah, and beer commercials are always on in the evenings and on Saturday afternoons when men are supposed to be watching sports," agreed Hanna.

"And the hamburger commercial is on after school just before supper," said Louis excitedly, "'cause Mom gets mad when I ask if we can go for one."

"Commercials really work," said Hanna thoughtfully.

"Right," said Chris. "So CLUB 4 had better learn about them."

Lesson Activity

Curriculum Topic

Consumer health - advertising

Objectives

- 1) Students will identify three food advertising techniques.
- 2) Students will understand how advertising works.

TEACHER'S NOTE: Before the lesson, identify three current television commercials that fit the three types on the worksheet.

Materials Needed

student copies of the *Classify the Commercial* worksheet

student copies of the *Test the Advertisement* worksheet

Shopper's Apprentice Certificates

Shopper's Apprentice folders

Procedure

1) Explain that most children watch a minimum of 40 commercials a day. Also explain that the food commercials are often for OTHER FOODS, eg. snack foods and chocolate bars as opposed to fresh fruit or vegetables.

2) Discuss with the class why TV is used to advertise and what effect advertising has on the viewing audience. Write the following questions on the board and use them to structure the discussion:

a) What is the definition of advertising? (A possible definition could be that advertising is presenting a product

or event in a positive manner in order to sell it to the public.)

b) Why is TV used for advertising? (Many viewers are possible buyers.)

c) Who pays for advertising and why? (Initially the producer because it sells products. Then the cost is added on to the price paid by the consumer.)

d) Who is the advertisement aimed at? (The advertisement is targeted at children, women, men etc. depending upon the product.)

3) Ask a student to recall a commercial. Examine the example by using the questions in 2) to analyze it.

4) Ask if the commercial works.

5) To judge if it works, hand out the copies of *Test the Advertisement* worksheet and see how many points apply.

6) Give out the *Classify the Commercial* worksheet. Let students look at the three main categories of advertising. Review the categories and have students identify other examples of each one.

a) **Endorsement** - the use of a well known personality, hero or cartoon character to endorse a product.

b) **Mumbo-jumbo** - the use of important sounding words or phrases that actually make no sense but make a product sound impressive. eg. "Our product is a little bit up."

c) **The One-sided Story** -
distorting facts and figures and misusing statistics to favour the product and give only one side of the story. eg. "A glass of powdered drink provides as much vitamin C as an orange." The ad does not say that it also contains sugar, artificial colouring, and none of the minerals found in natural fruit juice.

7) Have the students identify another example and check with each other to see if they have the right category.

8) Have the students check off the sixth statement on the *Shopper's Apprentice Certificate*.

Products they can evaluate:

instant puddings
cereals
gelatins
yogurts
pastas
cookies

Follow Up

1) Take home the *Classify the Commercial* and the *Test the Advertisement* worksheets. Classify and categorize food advertisements during one night's viewing.

2) Bring them back to school and add them to the *Shopper's Apprentice* folder.

3) Have students evaluate Brand names. Make students aware that Brand names usually are more expensive. The expense is usually from extra promotion, advertising, and marketing. Many generic or bulk products are made by the same companies that make Brand names. Brand name products have the best area on the store shelves, usually eye level. The generic products are above or below the brand name products so a person would have to reach or bend for them. This makes them less accessible and noticeable. Have students evaluate generic products versus Brand names. Don't let them know which is which until after they have evaluated the products. See if they can guess which is the more expensive product.

LESSON 6

Classify The Commercial

Name _____ Date _____

Using the following categories, classify the food commercials seen during an evening's TV viewing.

ENDORSEMENT - the use of a well known personality, hero or cartoon character to endorse a product

MUMBO-JUMBO - the use of important sounding words or phrases that actually make no sense but make a product sound impressive

THE ONE-SIDED STORY - distorting facts and figures and misusing statistics to favour the product and give only one side of the story

eg. "A glass of powdered drink provides as much vitamin C as an orange." The ad does not say that it also contains sugar, artificial colouring, and none of the minerals found in natural fruit juice.

Write in the time seen, the name of the product advertised, the type of advertisement, and any comments you wish to make about the commercial's effectiveness (use extra pages if needed). At the end of your viewing, note the number of commercials for fresh fruit and vegetables.

Time	Product	Type of Ad Used	Comments

Number of commercials for fresh fruits and vegetables _____

Test The Advertisement

Name _____ Date _____

1) Does it have a catchy tune that you remember and sing? Yes___No___

2) Do you feel compelled to buy a product because it is advertised by your favourite hero or cartoon character? Yes___No___

3) Does it make you feel guilty if you don't have that product? Yes___No___

4) Does the commercial make you smile or laugh so you feel good about the product? Yes___No___

5) Does the commercial make you feel you have missed out on something if you don't have the product? Yes___No___

6) Does the product have a catchy name or phrase that is easy to remember? Yes___No___

7) Does the food displayed almost make your mouth water? Yes___No___

If you can answer yes to any one of these, the commercial works.

If you can answer yes to several or all of these, the commercial is incredibly successful and will appeal to more people.

Hanna's Flyers

Curriculum Topic

Advertising

Hanna was really excited. She had a job! A REAL job - one that paid money. Not only that, it involved doing the very thing she enjoyed most, riding her bike. Hanna sped around town feeling very important and enjoying every minute.

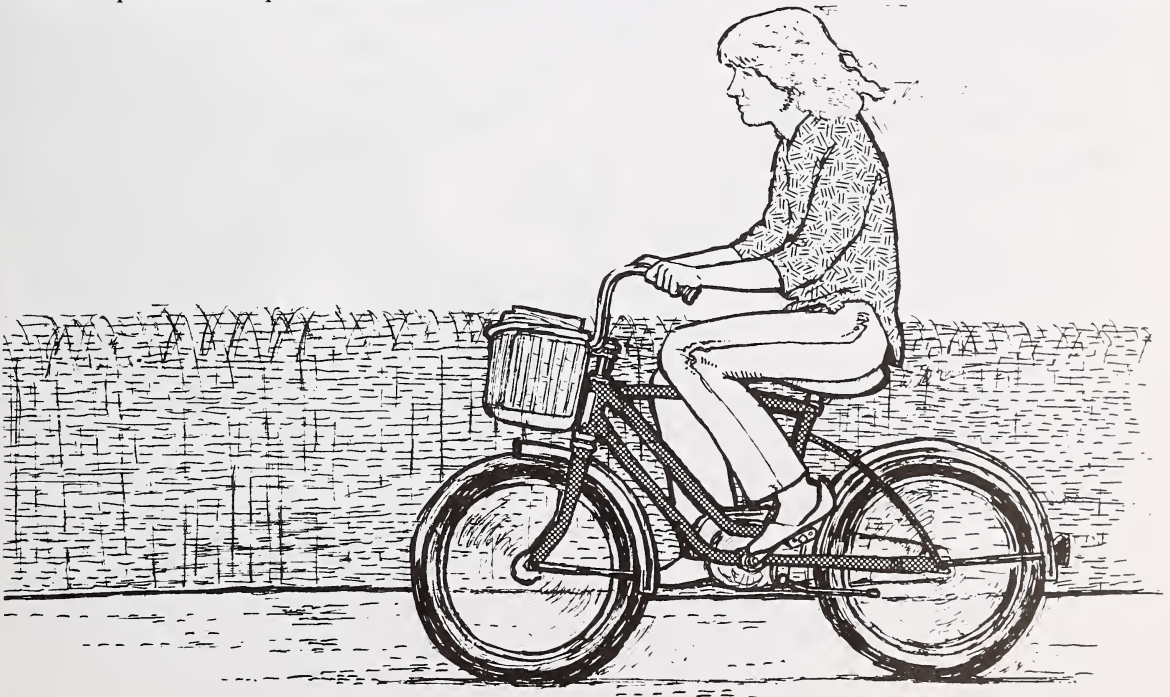
Of course, there was more to it than just riding her bike. Hanna had to deliver flyers for the local supermarket, but she had worked out a system. The flyers were in boxes. She placed a box on the sidewalk at the end of two streets, loaded some into her bike basket and cycled down the street, turning into each drive way or bumping up the path to the front door. Speed was important. When

bumping up the sidewalk she had to have just the right amount of speed to carry her up and over. If she went too slow, she bumped herself up and off... onto the ground.

Hanna had to get off the bike and race up the steps to the mail box, but that was done as fast as possible. Then she leapt back on her bike and coasted down the path to the next house.

"Hey Hanna, what are you delivering?" Louis appeared at the corner. Hanna squealed to a stop beside him.

"Flyers for the supermarket. I'll have earned five dollars when I've delivered them all," said Hanna breathlessly.



"Let's have a look." Louis reached in the basket and pulled out a flyer. "Hey, they're having a sale. Let's see if there is anything we can buy."

The two friends pored over the flyer. There were several coloured pictures. One showed big red, juicy looking beef roasts. Another large picture showed plump ripe bananas. Louis licked his lips at the picture of candy bars spilling out over a counter, and on the back of the flyer there were several advertisements for pop, potato chips, cookies, and jelly powder.

Louis handed the flyer to Hanna. "Have you noticed? It's like the TV - most of the stuff advertised is junk food."

"Meat and bananas aren't junk food," objected Hanna.

"No, they're not," agreed Louis, "but those pictures aren't like the meat and bananas in the store."

Hanna looked at the pictures. "They look like ordinary bananas to me."

Louis nodded. "Sure they do, but look how nice and yellow they are in the picture. I was in the store this morning and the bananas there are horrible. Some were all green and hard and the others all brown and bruised. We didn't buy any."

"I guess they must have advertised them because they wanted to get rid of them," said Hanna. "Oh well, it's good you went to the store, Louis. I'll tell my mom not to bother going. See ya." And she sped off to the next house.



Lesson Activity

Curriculum Topic

Consumer health - advertising techniques

Objective

Students will display knowledge of food advertising techniques by creating advertisements for nutritious foods.

TEACHER'S NOTE: Have students bring samples of flyers and food advertisements from magazines that represent several different advertising techniques.

Materials Needed

samples of flyers and food advertisements
art supplies and paper
student copies of the *Test The Advertisement* and *Classify the Commercial* worksheets from *Shopper's Apprentice* folders
Shopper's Apprentice Certificates

Procedure

1) Review the three techniques of TV food advertising - ENDORSEMENT, MUMBO-JUMBO and THE ONE-SIDED STORY.

2) Explain that flyers and advertisements in magazines also use a fourth technique called LOOKING GOOD. This technique uses a photo, drawing, or painting to show a perfect example of the product. The actual product on sale may not look nearly as good. This is what Louis pointed out in the story. What was the difference

between the bananas pictured on the flyer and the bananas on sale in the store?

3) Have the students take out the advertisements and flyers. Allow a few minutes for students to look at them closely and analyze the advertising techniques used.

4) Pick several students to hold up their advertisements and explain what technique it uses. Point out that many advertisements use more than one technique.

5) As *Shopper's Apprentices* the students are going to create advertisements for nutritious foods. Review the four food groups.

6) Brainstorm catchy phrases for nutritious foods.

7) Divide students into pairs, and hand out the art supplies.

8) Have the students create magazine or flyer advertisements for a nutritious food. Encourage them to be as creative as possible. They can use the *Test The Advertisement* worksheet to suggest ways they can succeed.

9) Hang the finished advertisements in the school corridors where other classes can see them.

10) Have the students check off the seventh statement on the *Shopper's Apprentice Certificate*.

Follow Up

Divide students into small groups. Have each group create and act out a TV commercial for a nutritious food. This may be performed for the younger grades.

The Vending Machine

Curriculum Topic

Foods that damage teeth

The wind was cold, so Chris, Louis and Hanna huddled into their coats and stuck their hands deep into their pockets.

"I wish Mai Lin would hurry up," muttered Louis. "The movie is due to start in 10 minutes."

With a squeal of brakes, Mr. Lee's car stopped beside them and Mai Lin jumped out. "Made it," she gasped. "Sorry I'm late, but I'd forgotten I had to go to a piano lesson first."

"OK," said Chris, grabbing her arm. "But come on, there's a lineup."

The four friends stood patiently in the line as it headed slowly but surely for the ticket booth.

"I'm starving," said Mai Lin looking around. "Dad picked me up from my lesson and we rushed off before I had time to eat. I wonder what I could get."

Hanna looked around. "There's a couple of vending machines over there. See what they've got. The movie theatre only sells candy and popcorn."

Mai Lin rushed to the vending machines and looked at the display. It was not encouraging. There were four kinds of candy bars, potato chips, cheese flavoured nibbles, and gum. "Guess I'm either going to starve tonight or choose foods that give me cavities," said Mai Lin glumly to herself as she moved on to the second machine. This was a drink machine and had several kinds of coffee, milk, chocolate milk and hot soup.

Mai Lin cheered up. "At least I can

get something that isn't candy. I just have to make the best choice."

She went back to the first machine, looked at the display and thought carefully. She dropped in her money, got a bag of potato chips and stuffed them in her pocket. Then she went back to the second machine. There she punched the button for a carton of milk and stuffed it into the other pocket. Then at the same machine she chose a cup of soup and carefully carried it across to the theatre lineup.

"What did you get?" asked Louis. Mai Lin showed them.

Hanna was impressed. "That's not bad for a meal from a vending machine. You didn't even get one chocolate bar."

Questions To Class: DID MAI LIN MAKE WISE CHOICES? WHAT CHOICES WOULD YOU MAKE FROM THE VENDING MACHINES?

Lesson Activity

Curriculum Topic

Preventing dental decay

Objective

Students will identify ways that foods can cause damage to teeth.

Materials Needed

student copies of the *Teeth Trivia* worksheet

Shopper's Apprentice Certificates
Shopper's Apprentice folders

Procedure

1) Talk about the foods available in vending machines. Write the examples suggested by the students on the board.

2) Discuss how to classify most vending machine foods.

3) Ask:

a) Why do vending machines contain a lot of candies and snacks and not things like fruit and cheese? (They have a long shelf life.)

b) What would happen if people became so keen on wise food choices that they never bought anything from a vending machine? (The vending machine owners would be pressured into stocking wise food choices.)

4) Discuss with the class the concept of the power of the consumers' money. When people buy wisely, manufacturers produce wise food choices and if people demand poor food choices, manufacturers supply them. (An illustration could be that several years ago

the only gums on the market contained sugar. People stopped buying them when the damage sugar did to teeth was proven. The manufacturers soon developed several brands of sugarless gum to recapture the market.)

5) Ask the class to discuss their knowledge of sugar, the damage it does to teeth and how to combat it. Mention that sticky sweets, because they are on the tooth surface longer, are very dangerous to teeth.

6) Test their knowledge with the *Teeth Trivia* worksheet.

7) Go over the answers as a class.

TEACHER'S ANSWERS TO WORKSHEET

1c, 2a, 3c, 4b, 5a, 6a, 7c, 8c, 9b, 10b, 11a

8) Have the students insert the worksheet into their *Shopper's Apprentice* folders and check off the eighth segment on the *Shopper's Apprentice Certificate*.

Follow Up

Either

Invite the local dental hygienist into the classroom to make a presentation.

Or

Show one of the health films available on teeth.

LESSON 8

Teeth Trivia

Name _____ Date _____

Circle the correct answer:

- 1) Caries are:
 - a) something like a tote bag.
 - b) two or more people with the name Cary.
 - c) tooth decay that develops because of the interaction of bacteria and food.
- 2) Plaque is:
 - a) a coating that adheres to tooth enamel.
 - b) French for the word 'place'.
 - c) a trophy made of teeth.
- 3) Teeth are:
 - a) for eating.
 - b) for appearance.
 - c) for eating, appearance and talking.
- 4) Which of the following snacks promote the most tooth decay?
 - a) savory snacks with soft drinks that contain sugar.
 - b) sticky snacks, sweet snacks and soft drinks containing sugar.
 - c) all snacks.
- 5) If you are unable to brush your teeth, it helps to:
 - a) eat an apple or carrot.
 - b) drink milk and fruit juice in place of soft drinks.
 - c) do both.
- 6) Fluoride is:
 - a) a protective mineral that becomes part of the tooth enamel.
 - b) an amusement park ride through tunnels of flour.
 - c) part of the space shuttle.
- 7) To keep teeth healthy:
 - a) brush and floss daily.
 - b) eat nutritious meals.
 - c) do both.
- 8) Diana Ross, Michael Jackson and Phyllis Diller all:
 - a) have false teeth.
 - b) are singers.
 - c) wore braces as adults.
- 9) The hardest substance in the human body is:
 - a) our bones.
 - b) our tooth enamel.
 - c) our skull.
- 10) Some people earn the title supernumerary. This means they:
 - a) can count backwards very quickly.
 - b) have an extra tooth in their mouth.
 - c) have never had a cavity.
- 11) Teeth fillings rarely fall out because:
 - a) they are narrower at the top than at the bottom.
 - b) they are stuck with glue.
 - c) both.

The Surprise

Curriculum Topic

Nutritious food can be fun

TEACHER'S NOTE: This lesson and lesson 10 are actually a joint activity that involves choosing and preparing a party menu. Though the two lessons can be done a week apart, the follow up activity for this lesson should be done the day before (or the same day) as lesson 10. To allow optimum time for actually preparing the recipes, there is no story for lesson 10.

"Shhh." Hanna nudged Chris. "Keep your voice down. Here comes Louis."

"This isn't going to be easy," muttered Mai Lin. "How can we plan a surprise party for Louis' birthday when he's always around us?"

"I guess we will just have to organize it on the phone tonight. Louis has a soccer practice so he won't be over at anyone's house," suggested Chris in a whisper.

"What's going on?" demanded Louis. "Every time I see you guys you're whispering about something. If you're mad at me, say so. But don't whisper about me behind my back."

Hanna, Chris and Mai Lin looked at each other in shock. Then Mai Lin burst into giggles.

Louis turned on her. "It's not funny. How would you like it if I talked about you behind your back. Friends don't do that," and he stormed off to the other side of the playground.

"I guess we have been talking secretly a lot. Poor Louis thinks we're mad at him." Chris grinned. "I'll go and talk with him and you two finish planning

the party and phone me, OK?" and he ran off to see Louis.

That night the phones between Chris, Hanna and Mai Lin were ringing non-stop.

"It's got to be a proper CLUB 4 party. So it should be nutritious food without too many other foods," said Hanna.

"That's OK," argued Chris "but Louis' favourite food is a milkshake. He's got to have his favourite food on his birthday."

"That's OK," said Mai Lin excitedly. "My dad said he'd give us some food from the store. We'll ask him for milk and fresh fruit and make that into milkshakes."

Mrs Bogart took out a pile of cookbooks. Hanna looked through them and copied out several recipes.

The next day the three friends met again and looked at Hanna's recipes.

"These look pretty easy," said Chris.

"Let's choose two each. We can make them on Saturday and have the party for Louis on Saturday night."

So that's what they did.

There was only one problem! Louis was so mad at Chris and the girls that he wouldn't go over to Chris' house.

"What will we do?" asked Mai Lin in despair. "We'll have to tell him and ruin the surprise."

"No we won't," said Hanna and ran to the phone, dialled, and asked to speak to Louis' dad. It only took a few minutes to explain the situation.

"He'll be there," promised Mr Dumont. "And he won't know where he is going."

Hanna, Mai Lin and Chris watched the driveway. On the dot of five o' clock, the Dumont's car drove up. Sitting in the front passenger seat was a very odd figure. It was Louis with a brown paper bag over his head!

Mr Dumont helped Louis out of the car and guided him up the front steps of

Chris' house. Silently Chris held the door open and Louis was pushed into the living room.

"SURPRISE," yelled everyone.

Louis pulled the bag off his head and looked around. The room was decorated with balloons and the table laden with food. There was a platter of raw vegetables and dip, another with open-face sandwiches. Fresh muffins steamed in a basket and fresh fruit milkshakes stood in tall glasses with coloured straws.

"You mean this is why you've all been whispering for days?" asked Louis. "You were planning a party?"

The other members of CLUB 4 nodded and waited for Louis' reaction.

Louis grinned. "Right, gang," he said. "Then let's eat!!!"



Lesson Activity

Curriculum Topic

Nutritious food can be fun

Objective

Students will choose nutritious alternatives to normal party food.

Materials Needed

student copies of the *Party Food Recipes*
 student copies of *Menu and Shopping List* worksheet
Shopper's Apprentice Certificates
Shopper's Apprentice folders

Procedure

- 1) Discuss the students' favourite party food. Write examples on the board.
- 2) Classify them into the four food groups, noting how many would be considered other foods.
- 3) Hand out the copies of the *Party Food Recipes*. Give the class a few minutes to read them.
- 4) Discuss why these recipes make healthy party food. (They are low in sugar and fat and fit into *Canada's Food Guide*.)
- 5) Tell the students they are going to choose the menu for a healthy food party. They need to choose five recipes (two savory, two dessert, and one drink) to give a varied menu.
- 6) Allow students to debate the value of the dishes using *Canada's Food Guide*. Take a class vote for the top five favourites.
- 7) When the dishes are chosen, give out the *Menu and Shopping List*

worksheet.

8) Using the recipes for the five items, each student writes down the menu and compiles a shopping list of the ingredients.

9) Have the students check off the ninth statement on their *Shopper's Apprentice Certificate*.

10) Add the *Party Food Recipes* and the *Menu and Shopping List* worksheet to the *Shopper's Apprentice* folder.

Follow Up

- 1) Divide the students into small groups (between four to six people depending on class size).
- 2) Assign one of the five recipes to each group.
- 3) Give each group the responsibility for shopping for the ingredients for their recipe. (Organize the shopping before the next lesson.)

LESSON 9

Menu And Shopping List

Name _____ Date _____

MENU Try and make sure all the four food groups are represented.	SHOPPING LIST List the ingredients needed to make the recipes.
<p>Milk Drink _____</p> <p>_____</p> <p>2 Savory Snacks _____</p> <p>_____</p> <p>2 Dessert Snacks _____</p> <p>_____</p>	

Group Activity

Our group is making: _____

Shopping List

Using the recipes, list the ingredients and the combined amounts needed to serve the whole class.

Party Food Recipes

MILK DRINKS

BANANA EGGNOG

500 mL	milk
3	ripe bananas
1	egg
	nutmeg and cinnamon

Combine milk, banana, and egg in blender container. Cover and blend until smooth. Pour into 4 glasses and sprinkle with nutmeg and cinnamon.

Makes 1 L or 4 servings.

PEACH SPRITZER

Make if also making peach porcupines in the dessert section)

Drained juice from 3 (796 mL each) cans of unsweetened peaches
1 L soda water

Combine equal amounts of peach juice and soda water in glass. Makes 12 250 mL servings.

EACH OF THE FOLLOWING RECIPES MAKES 1 SERVING

STRAWBERRY DREAM

75 mL	crushed strawberries
10 mL	lemon juice
10 mL	sugar
250 mL	milk

Combine all ingredients until well blended. Pour into tall glass and serve.

HULA COOLER

25 mL	crushed pineapple
5 mL	coconut
5 mL	sugar
1 mL	vanilla
250 mL	milk
	nutmeg

Combine all ingredients except nutmeg until well blended. Pour into tall glass and sprinkle with nutmeg.

PURPLE COW

25 mL	frozen grape concentrate
250 mL	milk

Blend together and serve.

SAVORY SNACKS

VEGETABLES AND DIP

500 mL	yogurt
125 mL	finely chopped green pepper
125 mL	grated radish
125 mL	grated carrot
50 mL	chopped green onion
50 mL	chopped fresh parsley
5 mL	salt
2 mL	pepper
	Selection of fresh vegetables

Combine all dip ingredients. Cover and chill. Serve with fresh vegetables. Makes 750 mL. (Serves 20-30.)

CHEESE TINKER TOYS

1 kg cheese, cubed (Swiss, mozzarella, Colby, farmers)

3 packages (255 g each) straight pretzels

Spear a cube of cheese with a pretzel.

Build edible structures with them the way you do with tinker toys.

INSIDE OUT SANDWICHES

1 bread stick for each student

1 slice of meat for each student
(assorted meats)

1 jar (250 g) cheese spread

Spread cheese on a meat slice. Roll it around the bread stick.

DESSERT SNACKS

PUMPKIN MUFFINS

750 mL	flour
20 mL	baking powder
5 mL	salt
5 mL	cinnamon
5 mL	nutmeg
150 mL	brown sugar
2	eggs
250 mL	milk
125 mL	melted butter
250 mL	canned or cooked and pumpkin and pureed pumpkin

In large bowl, sift together flour, baking powder, salt, cinnamon and nutmeg. Stir in brown sugar. Combine eggs, milk, butter and pumpkin in separate

bowl or jug. Make a well in dry ingredients and add liquid mixture, stirring until just moistened.

Fill prepared muffin tins two-thirds full. Bake at 200 °C 20 to 25 min or until just brown.

Makes 24 muffins.

APPLE FINGER JELLY

2 cans (355 mL each) frozen apple juice, thawed

6 packages (7 g each) unflavoured gelatin

750 mL boiling water

Soften gelatin in juice concentrate. Add boiling water and stir until gelatin is dissolved. Pour into 33 x 21 cm pan and chill. (Speed up setting by putting in freezer portion of refrigerator.) Cut into squares when firm. Keep refrigerated until ready to serve.

PEACH PORCUPINES

3 cans (796 mL each) peach halves in natural juice, drained*

2 packages (100 g each) slivered almonds

Place 1 peach half per student flat side down on large plate. Stick 10 to 15 slivered almonds in the back of each peach to make spines.

Makes 36 porcupines.

*Save juice for Peach Spritzer.

Tested Recipes
Alberta Agriculture,
Food & Rural Development

Club 4's Food Party - Lesson Activity

Curriculum Topic

Nutritious food can be fun

Objective

Students will prepare party foods that fit into *Canada's Food Guide*.

TEACHER'S NOTE: This lesson involves a lot of teacher preparation. According to the recipes chosen in the previous lesson, the teacher will need to assemble enough cooking utensils for each activity. Students will need to shop ahead or bring ingredients from home. The teacher should check that all the correct ingredients are on hand and set up five work centres with the utensils needed for the recipes chosen. The teacher may wish to involve parent volunteers to help at each work centre.

Materials Needed

student copies of *Party Food Recipes*
Shopper's Apprentice Certificates
Shopper's Apprentice folders
ingredients for the recipes
party plates
plastic glasses
plastic utensils
serviettes

(The last five items could be donations or the students could bring them from home.)

Procedure

- 1) Have students wash their hands.
- 2) Have students divide into their groups. Assign each group a work centre and a parent helper.
- 3) At the work centre, the students

may take turns to do one step of the recipe ie. measuring ingredients, stirring, pouring into a pan, etc. or each student can make a small batch of the same recipe.

4) Prepare the recipes according to instructions.

5) When the food is ready, present the *Shopper's Apprentice Certificates* and have students add the *Party Food Recipes* to the *Shopper's Apprentice* folders.

6) HAVE THE PARTY!

Follow Up

Invite the parents into the classroom to view a display of the *Shopper's Apprentice* folders and the art work. Students could act out some of the commercials.

Students can then take their *Shopper's Apprentice* folders home for reference.



Explore Nutritious Alberta

Grade 6

Eating the Summer Away

Curriculum Topic

Review *Canada's Food Guide* and CLUB 4

TEACHER'S NOTE: This unit, **Passport to Nutrition**, will discuss food implications in the world around the students. The first part of the unit will require a wall map of Alberta. This will allow you to mark areas mentioned in the lessons. The passport 'stamps' for all lessons in the unit are enclosed at the end of the first lesson. Photocopy the sheet and give it to the students who will use it at the end of each lesson.

During this unit encourage class members to think of themselves as members of CLUB 4 by choosing a 'CLUB 4 member of the week' from the class. Choose someone who brings a nutritious snack or lunch, or someone who does the nutrition work particularly well. Put the student's name and/or photo up on a special corner of the bulletin board and explain why they are chosen.

Since this is the first lesson for grade six, reintroduce the concept of CLUB 4 using the poster and the information at the front of this binder.

"Oh boy, what a summer!" exclaimed Mai Lin to Chris, Louis and Hanna. The four friends lay on their backs on the baseball diamond and looked up into the clear blue sky.

"I've visited friends in Calgary, been to the mountains, had a holiday on a farm near Lethbridge, biked around here, gone swimming most days, skate boarded, climbed trees, made a fort and had some terrific meals," continued Mai Lin breathlessly. "It's been great!"

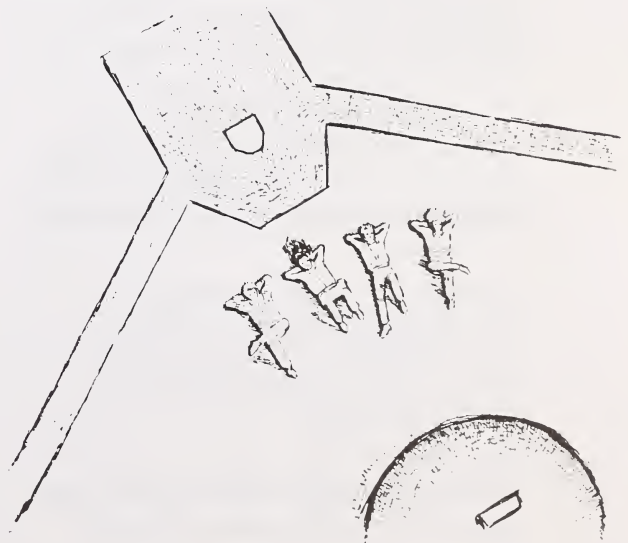
Chris laughed. "No wonder we haven't seen you around much. And what's all this about terrific meals? I thought we were all going to try and stick to CLUB 4 eating over the holidays."

"Oh, but I did," protested Mai Lin.

"That was what was so great. Dad can't get away from the store in the summer, so I went to stay with my cousins in Calgary. They have a Chinese restaurant. Chinese food is full of vegetables and very healthy, so I ate there most of the time. I tried foods I've never had before. Some of the vegetables were really weird, but very good."

"Where do they get all the vegetables from?" asked Hanna.

"Do you remember visiting Grandma's farm near Lethbridge?" asked Mai Lin. "Well, one of my uncles helps her run the farm. They grow fresh Chinese vegetables and he trucks them into Calgary." Mai Lin pulled a face at Chris. "See, I told you I ate good food. Anyway Chris, did you stick to CLUB 4 eating?"



Chris laughed. "Weeell...," he said slowly, "I was OK until we went to Baba's place at Vegreville. She makes these giant perogies with sour cream and onions. I kind of pigged out on them, but I also had fruit and vegetables and milk.."

"You make me feel good," Louis said, "'cause I kind of pigged out too. I went up north to stay with Big Mike and Cindy near Slave Lake. We ate lots of vegetables and fruit and meat. Cindy made saskatoon pie and we had it with cream nearly every day. It was yummy."

Hanna sat up and looked at Chris, Louis and Mai Lin. "You don't look fat though. I guess a few other foods didn't hurt if you were active."

"Oh, we were," said everyone together.

"I went hiking in the bush every day," said Louis.

"I helped on the farm, went swimming and stuff, or helped in the restaurant," said Mai Lin.

"My whole family worked on Baba's farm all summer," said Chris. "What about you Hanna?"

"Oh, stayed home and went to the lake, rode my bike and worked in the garden here. We grew lots of vegetables and salad greens."

"And your raspberries?" asked Louis. "And raspberries," agreed Hanna. "Seeing as everyone did follow CLUB 4 eating habits, why don't we go and snack on some now?"

Food Guide. If they were served in a pie they would count as an other foods because of the extra calories in the pastry and the added sugar.

Questions to Class: WHY ARE RASPBERRIES A GOOD SNACK? WHAT WOULD MAKE THEM AN OTHER FOODS?

Answer: Fresh raspberries are part of the vegetables and fruit group of *Canada's*

Lesson Activity

Curriculum Topic

Review the four food groups.

Objectives

1) Students will review each other's nutrition knowledge by asking questions based on *Canada's Food Guide*.

2) Students will be encouraged to become active members of CLUB 4.

Materials Needed

4 Food Groups Poster (to be made)
Nutrient Cartoons, grade 4 lesson 4
wall map of Alberta
student copies of *Canada's Food Guide*
student copies of *Canada's Food Guide and Food Choice Quiz*
coloured map pins
student copies of *Passport Stamps*
materials to make passport folders
or pre-made folders

Procedure

1) Have the students make a *4 Food Groups Poster* from magazine pictures that have been cut out and placed in four sections on the poster board. This should be done in the shape of a rainbow to follow Canada's Food Guide.

2) Introduce the Grade 6 Nutrition Theme of **Passport to Nutrition** by writing the theme title on the board and having the class guess what it might mean. Explain that in this unit they will be

looking at choices of life style in the world around them, and seeing how this affects nutrition.

3) Look at the wall map of Alberta. Find and mark the places mentioned in the story. Mark the location of your school on the map.

4) Explain that while we cannot physically travel around Alberta during this unit, we will use the lessons to become aware of Alberta and how its agriculture affects the things we eat. Each student will make a passport folder and complete an activity that will be stamped and added to the folder at the completion of each lesson.

5) Place the *4 Food Group Posters* and *Nutrient Cartoons* around the room for class viewing and give each student a copy of *Canada's Food Guide*.

6) Pass out the *Canada's Food Guide and Food Choice Quiz*. Allow the students 10 minutes to circulate and ask 10 other students one question each from their sheet.

To facilitate students' circulation, divide the class in half. Arrange half the students in a stationary inner circle. Arrange the other half in an outer circle so that each student has a partner. Each student asks the other a question, then the outer circle rotates to change partners.

7) Referring to *Canada's Food Guide* and your copy of *Nutrition: The Ins and Outs*, spend the last part of the class going over the quiz, and discussing the correct answers. (The quiz is an excellent review of the material covered in Grade 5.)

Follow Up

1) Have the students make their *Passport to Nutrition* folders and design a cover (possibly in an art class).

2) Give the students their *Passport Stamps* so they can cut out and attach the first stamp to their *Canada's Food Guide and Food Choice Quiz*. Have the students add the quiz and *Canada's Food Guide* to their folders. Also have them add the sheet of *Passport Stamps* for use in future lessons.

3) Choose a Club 4 member of the week.

CANADA'S FOOD GUIDE AND FOOD CHOICE QUIZ ANSWERS

1 True, 2 True, 3 False, 4 False, 5 False, 6 False, 7 True, 8 False, 9 True, 10 False

TEACHER'S NOTE: The *Passport to Nutrition* folder may be designed like the *Shopper's Apprentice Folder*, grade 5 lesson 1.

LESSON 1

Canada's Food Guide and Food Choice Quiz

Interviewer _____ Date _____

Circulate around the room to find answers to the following ten questions. Each person can answer only one question. THEN YOU MUST ASK SOMEONE ELSE.

1) A ten year old child needs four servings of milk each day.

TRUE or FALSE?

2) *Canada's Food Guide* is a guide to the daily nutrient requirements for children, teenagers and adults.

TRUE or FALSE?

3) Vitamin supplements are necessary even if you follow *Canada's Food Guide*.

TRUE or FALSE?

4) Green beans, soybeans, and navy beans are all examples of complete food sources of protein.

TRUE or FALSE?

5) All breakfast cereals provide the same food value.

TRUE or FALSE?

6) *Canada's Food Guide* allows for other foods like milk chocolate because it contains milk and is part of the milk products group.

TRUE or FALSE?

7) Television programs and parental eating habits affect children's food choices.

TRUE or FALSE?

8) *Canada's Food Guide* recommends that you eat three big meals daily and does not encourage snacking.

TRUE or FALSE?

9) If a can of YUMMY SOUP lists its ingredients as: chicken, carrots, potatoes, peas and broth, and a can of SPECIAL SOUP lists its ingredients as: broth, chicken, carrots, potatoes, and peas, the YUMMY SOUP is a better buy.

TRUE or FALSE?

10) Skipping breakfast helps a person control his/her weight.

TRUE or FALSE?

LESSON 1

Passport Stamps



Lesson 1
Canada's Food
Guide



Lesson 2
Nutrients In
Food



Lesson 3
Nutrients In
Food



Lesson 4
Food
Choices



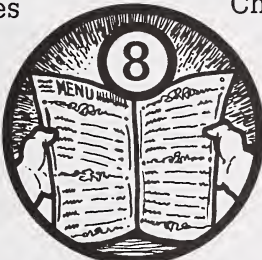
Lesson 5
Cost and Food
Choices



Lesson 6
Culture and Food
Choices



Lesson 7
Peers and Food
Choices



Lesson 8
Balanced Restaurant
Meals



Lesson 9
Eating and
TV



Lesson 10
Comfort Food

The first part of the paper discusses the importance of the study and the objectives of the research.

The second part of the paper describes the methodology used in the study, including the data collection and analysis techniques.

The third part of the paper presents the results of the study, which show a significant positive correlation between the variables.

The fourth part of the paper discusses the implications of the findings and provides recommendations for future research.

The final part of the paper concludes the study and summarizes the main findings.

What's in a Name?

Curriculum Topic
Nutrients in foods

"Hanna, are you still eating breakfast?" called Mrs Bogart.

"Sort of," answered Hanna.

"What does that mean?" asked her mother, coming into the kitchen.

Hanna grinned. "It means I haven't finished reading the cereal box yet," she said.

"Oh no," groaned her mother. "Not another competition. Last time you suggested we buy eight boxes of a cereal we all disliked."

Hanna shook her head and laughed. "No, it's not a competition. I was just reading the list of things in this cereal." Hanna pointed to the side panel of the box. "Look, Mom. It says there is protein

in the cereal. I thought protein was in meat, chicken, beans and things like that."

Mrs Bogart came over and peered at the side of the cereal box. "Hmmm," she murmured. "This is pretty confusing."

"And look on the front of the box. It says 'a bowl of cereal with milk is a good source of protein and also contains nine essential vitamins.' You told me cereal isn't very nutritious," ended Hanna accusingly.

Mrs Bogart picked up the box and read it carefully. "Well Hanna, this is a case of having to read the scientific names properly and also having a good knowledge of nutrition so you can interpret the information correctly. There is a small amount of protein in the cereal.



Small amounts of protein are found in grains so when corn or wheat is ground to make flour then there is some protein in the flour, but it is only a tiny bit. There is also protein in milk. That is why the cereal box says that "a bowl of cereal WITH MILK is a good source of protein. Without the milk it wouldn't be."

"So it's the milk that makes it a good source of protein then?" asked Hanna.

Her mother nodded.

"That's pretty sneaky," grumbled Hanna. "What good is cereal?"

"Well, it provides carbohydrates," said her mother. "And some cereals are enriched and provide B vitamins and iron. A helping of whole grain or enriched cereal with choices from other food groups will give you a balanced meal."

"So that's why you encourage me to have a sliced banana or apple on my cereal," exclaimed Hanna. "If I have cereal, banana and milk, I've chosen three food groups."

"That's right," agreed her mother. "The cereal provides carbohydrates, B vitamins and iron. The banana provides some vitamins and minerals and the milk provides some protein, fat and minerals like calcium."

Hanna was thoughtful. "So if I rush breakfast and only have cereal, I'm not eating a balanced meal?"

"Hurray, you're really understanding," exclaimed her mother. "Cereal is a good breakfast when you add other food groups to it."

Hanna poured herself a glass of orange juice.

"Right," she said. "I will."

Lesson Activity

Curriculum Topic

Nutrients in food - carbohydrate, fat and protein.

Objective

Students will become aware of some nutrients in food by locating and recording the amount of fat, carbohydrate and protein from some specific *Food Bar Graphs*.

TEACHER'S NOTE: Please read the instructions accompanying the *Food Bar Graphs* regarding use and interpretation.

Materials Needed

Nutrient Cartoons for protein, fat and carbohydrates, grade 4

Food Bar Graphs included with this resource binder

student copies of *What Does My Food Contain?* worksheet

wall map of Alberta

red, blue and green coloured pencils

string

Passport To Nutrition folders

Procedure

1) Place the *Nutrient Cartoons* for carbohydrates, fat and protein on the board, with enough room around them to write additional information.

2) Ask the class what they know about protein, carbohydrates, and fat. Write their information around each cartoon. Include some of the following information:

PROTEIN is needed in building and maintaining body tissues such as muscle, blood and bones. It also builds and repairs damaged cells. Good sources of protein are found in meat, milk, cheese, eggs and fish.

CARBOHYDRATE comes in two main forms - starch and sugar. Starch and sugar provide fuel energy and staying power for the work of the body. Starches are found in breads, cereals and pastas; and sugars can be found in fruits and many other foods such as sugar, candy and syrup. The body needs sugar and can store some in the liver, but extra sugar is converted to body fat, so you should not eat more than your body can use.

FAT provides twice as much fuel and energy as the same amount of carbohydrate, but the body releases this energy more slowly. Fatty deposits are found in all body tissues to some degree. These deposits also serve as protection to our vital organs such as the kidneys and heart. Since Vitamins A, D, E and K are fat soluble, dietary fat is necessary as a carrier in the food supply and the body. The key to fat consumption is to use moderation. Extra protein and carbohydrate are stored in the body in the form of fat and can lead to obesity.

3) Place the *Food Bar Graphs* around the room.

4) Hand out the *What Does My Food Contain?* worksheet and go through the first example with the class.

5) Have some students start at the bottom of the worksheet and work up, others could start in the middle. This would prevent all students from wanting the same graph at the same time.

6) After the students complete the worksheet, have them cut out and attach the second stamp to it, and place it in their *Passport to Nutrition* folders.

Follow Up

1) Divide the class into three groups. Give group one responsibility for discovering a locally produced source of food containing fat (eg. dairy farm, hog farm, cheese factory). Group two identifies a major local source of protein (eg. egg farm, cattle ranch, fishing, poultry farm). Group three identifies local sources of carbohydrates (eg. pasta plant, potato farm, grain farm, flour mill, bakery).

2) Mark these places on the Alberta wall map. Place the carbohydrate, fat and protein cartoons on the wall around the map and join them with string to the correct markers.

3) Fat comparison: Mix margarine with flour to obtain a stiff consistency. Measure out the amount of teaspoons per product chosen. Form into a ball and wrap in plastic wrap. Using the following food choices see if the students can guess which size ball represents the amount of fat in each food. Each teaspoon of fat represents 4 grams.

1 jelly doughnut 5 1/2 tsp 22 grams
1 caramilk bar 1 tsp 4 grams

1 hot dog 4 tsp 16 grams
15 potato chips 2 tsp 8 grams
1 regular fries 6 tsp 24 grams

1 burger with 1/2 teaspoon of mayonnaise,
1 large fries, 1 regular chocolate shake
13 1/2 tsp 54 grams

1 Chicken Snack Pack (2 pieces of chicken, fries, coleslaw)
13 3/4 tsp 55 grams (about the amount of a small baby food jar filled with oil)

4) Choose a CLUB 4 member of the week.

LESSON 2

What Does My Food Contain?

Name _____ Date _____

Find the *Food Bar Graph* for each food listed below. Consult the graph to find the amount of carbohydrate, fat and protein present in a serving of that food.

Write the answers in the correct columns opposite the listed food.

	% CARBOHYDRATES	% FAT	% PROTEIN
Roast Beef			
Roast Pork			
Chicken			
Fish			
Carrot			
Broccoli			
Tossed Green Salad			
Grapefruit			
Banana			
Ice Cream			
Whole Milk			
Chocolate Milk			
2% Milk			
Chocolate Bar			
Potato Chips			
Butter			
Peanut Butter			
Oatmeal			
Whole Grain Bread			
Soda Crackers			

After completing this worksheet, circle the food item with the most carbohydrates in blue, the one with the most protein in red, and the one with the most fat in green.

Pine Needle Tea

Curriculum Topic
Nutrients in food

"Hey, Chris," called Louis. "It's time we left for soccer practice." Chris turned the page in his book and said nothing.

"CHRIS!" yelled Louis, even louder.

There was not a flicker of an eyelid. Chris just carried on reading.

Louis ran right up to Chris, bent down and quickly twisted the book out of his hands. "Come on Chris, it's soccer time."

Chris looked up with a dazed expression on his face. "What did you do that for, Louis?"

Louis punched him on the shoulder good naturedly. "I had to do something to get your attention. I've been yelling at you and you just kept on reading."

"It's a good book," admitted Chris. "I guess I was so busy reading I didn't hear you." He stood up and stretched. "You're right, we'd better get ready for soccer practice."

"What's so interesting about that book, anyway?" asked Louis curiously as they changed in the locker room.

"It's about explorers," explained Chris enthusiastically. "That's what I want to do when I'm older. Go off into some unknown country and explore like Jacques Cartier."

"Who?" asked Louis.

"He's this really neat French explorer who came to Canada," explained Chris. "He's the guy who first charted the

St Lawrence river, and his men were saved by the native people when they were dying of scurvy."

"I've heard of scurvy," said Louis. "Isn't that the disease sailors got in the old days when they never ate fruit?"



Chris nodded. "Yup. But in this book the native people cured Jacques Cartier and his sailors with pine needles."

Louis sat up and looked at Chris in amazement. "Pine needles? You can't eat those."

Chris nodded. "They did, sort of. The native shaman made a tea by boiling the pine needles and after they drank it, they were cured."

"Yuk," said Louis, pulling a face. "I wonder why that cured them?"

"I guess because the tea had vitamin C in it. My dad said scurvy was caused by not having vitamin C in the diet. That was why eating fruit cured it. Pine needles must contain vitamin C too."

Louis rummaged in his locker and pulled out a beaten up orange.

"Here," he said, dividing it in half. "Better eat this. Then we won't have to eat pine needles."



Lesson Activity

Curriculum Topic

Nutrients in food - vitamins, minerals and water.

Objective

Students will become aware of some names and functions of vitamins, minerals and water by completing a word jumble activity.

Materials Needed

Nutrient Cartoons for vitamins, minerals and water, grade 4
 student copies of *Functions of Food Groups* fact sheet
 student copies of *Water, Vitamins and Minerals*
Word Jumble worksheet
Food Bar Graphs included with this resource binder
Passport To Nutrition folders

Procedure

- 1) Write WATER, VITAMINS, MINERALS on the board. Place the *Nutrient Cartoons* under each word.
- 2) Discuss the following points:
 - a) VITAMINS are only needed in very small amounts to do their tasks of aiding digestion, helping the body absorb and utilize other food nutrients, and keeping the body healthy. Most foods contain a variety of vitamins but no one food provides all the daily nutrient requirements.
 - b) MINERALS comprise four percent of the body's weight. Minerals have a crucial role in achieving and

maintaining a healthy normal body. One important mineral is calcium because we need it for bones and teeth. Other minerals, like phosphorus and iron, are also important to our health.

c) WATER is absolutely essential although people often forget about it. Seven tenths of the body is water and blood is 90% water. Our bodies use water to transport nutrients through our systems and also to remove waste products. Water is present, to some degree, in everything we eat.

3) Hand out the *Functions of Food Groups* fact sheet and the *Water, Vitamins and Minerals Word Jumble* worksheet.

4) Have students unscramble the words by using the clues and information on the *Functions of Food Groups* fact sheet.

5) Check the answers with the class and attach the third stamp to the bottom or back of the *Water, Vitamins, and Minerals Word Jumble* worksheet.

6) Have students add the fact sheet and worksheet to their *Passport to Nutrition* folders.

Follow Up

- 1) Ask students to find out where their local water comes from. Mark a lake, river or reservoir on the map of Alberta. If it is piped in from a nearby

city, mark the city. If it is well water, identify the nearest large river, lake or reservoir to your area.

2) Have the students look through the *Food Bar Graphs* for their favourite food. Ask them to list what vitamins and minerals it contains and write a sentence about what they discovered. Place the sentences in their *Passport to Nutrition* folders.

3) Choose a CLUB 4 member for the week.

ANSWERS TO WATER, VITAMIN AND MINERALS WORD JUMBLE

- 1) potassium
- 2) niacin
- 3) calcium
- 4) iron
- 5) thiamin
- 6) vitamin A
- 7) ascorbic acid
- 8) riboflavin
- 9) iodine
- 10) water

Water, Vitamins and Minerals Word Jumble

Name _____ Date _____

Can you pass the next hurdle by showing you know your vitamins and minerals?

Use the written clues, the list of words at the bottom and, the information on the *Functions of Food Groups* fact sheet, to unscramble the following words:

1) iotmsspau - I make muscles contract and am found in milk, bananas and tomatoes.

2) cnniia - I'm the good health doctor for the tongue, digestive tract, skin and nervous system. I'm found in meats, whole grains and enriched breads.

3) iclmauc - I'm found in milk, edible fish bones and cheese. I build bones and teeth, clot blood and help nerves, the heart and other muscles function properly.

4) roin - I'm a mineral found in organ meats, whole grains and enriched cereals. I work with protein to create hemoglobin.

5) inathim - I'm a vitamin found in enriched cereals and breads. I help you to have a healthy appetite and keep your nervous system in good order.

6) tmiavna - I help you grow, keep your skin smooth and help your eyes adjust to dim light. You'll find me in dark green and deep yellow vegetables.

7) crocsabi idca - A fancy name for Vitamin C, I help to heal wounds and keep your gums healthy. I'm found in citrus fruits, cantaloupe and strawberries.

8) vloirbfnai - I keep eyes healthy and help the cells to utilize oxygen. You find me in dark green leafy vegetables, cheese and chicken.

9) nodiei - I assist your thyroid gland in functioning properly.

10) trawe - I'm found in all drinking fluids and aid in body temperature regulation, digestion and absorption of foods.

Here are the unscrambled words, but not in correct order. Cross off each word as you use it to fill a blank above. There is one extra word. calcium, thiamin, water, phosphorous, niacin, vitamin A, riboflavin, potassium, iron, ascorbic acid, iodine.

Function	Food Group	Key Nutrients	Function of Nutrients
GROW (Bones and Teeth)	Milk Products	Calcium	<ul style="list-style-type: none"> •Builds strong bones and teeth •Repairs the skeleton
		Protein	<ul style="list-style-type: none"> •Builds and repairs muscle and tissue
		Vitamin A	<ul style="list-style-type: none"> •Helps normal growth and formation of bones and teeth •Maintains normal eyesight •Helps keep skin healthy
		Riboflavin (B2)	<ul style="list-style-type: none"> •Helps in normal growth and development •Helps the body use energy •Helps keep skin healthy
GROW (Muscle and tissue)	Meat and Alternatives	Protein	<ul style="list-style-type: none"> •Builds and repairs muscle and tissue
		Iron	<ul style="list-style-type: none"> •Helps build and maintain blood •Helps blood transport oxygen and carbon dioxide
		Riboflavin (B2) Niacin (B3) Thiamin (B1)	<ul style="list-style-type: none"> •Help in normal growth and development •Help the body use energy from food •Help maintain a good appetite
GO	Grain Products	Carbohydrate	<ul style="list-style-type: none"> •Main source of energy
		Iron	<ul style="list-style-type: none"> •Helps build and maintain blood •Helps blood transport oxygen and carbon dioxide
		Thiamin (B1)	<ul style="list-style-type: none"> •Helps release food energy from carbohydrates and transports it to body cells during metabolism
		Riboflavin (B2)	<ul style="list-style-type: none"> •Helps get energy into the body •Helps the nervous system to work normally
		Niacin (B3)	<ul style="list-style-type: none"> •Helps the nervous system to work normally •Helps keep digestion normal
GLOW	Vegetables and Fruit	Vitamin A	<ul style="list-style-type: none"> •Helps keep eyesight healthy •Keeps skin and body lining layers healthy to help resist infection
		Vitamin C (ascorbic acid)	<ul style="list-style-type: none"> •Helps “glue” body cells together •Keeps teeth and gums healthy •Helps keep blood vessel walls strong

Adapted from a chart prepared by the Ontario Milk Marketing Board

You'll Never Guess Where Sugar Comes From

Curriculum Topic

Factors influencing food choices

"Here, catch," called Hanna, and tossed three wooden stalks to Chris, Louis and Mai Lin. Everyone's hand reached up in the air to catch them.

"What is it?" asked Mai Lin curiously as she turned it over and over in her hand. "Looks like a piece of fresh bamboo."

Hanna grinned. "Chew the end and see," she instructed and put a similar piece in her mouth and sucked on it like a straw.

The other three members of CLUB 4 looked at each other and pulled faces. No one wanted to be the first to taste it.

"Go on, try it," Hanna urged. "It's a surprise."

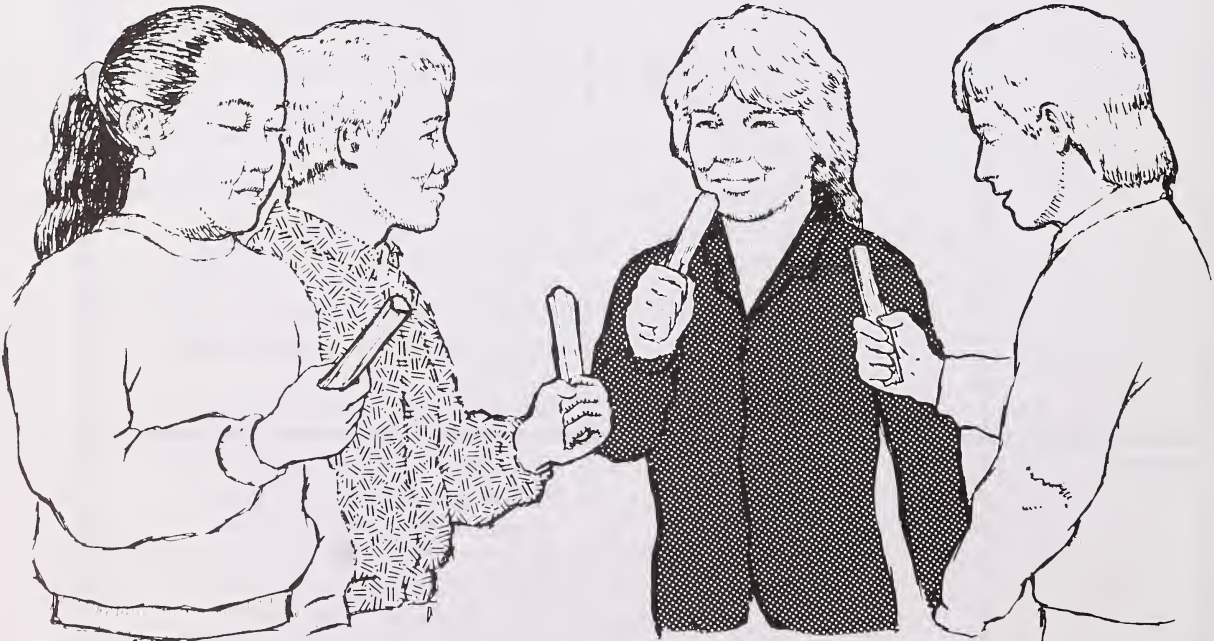
One by one the three friends gingerly stuck out their tongues and touched the bottom of the stalk. Not much taste there.

"Come on you guys, taste it," encouraged Hanna.

Mai Lin took the plunge. Her face lit with an enormous grin. "It's sweet," she said and nibbled some more.

Hanna laughed. "Know what it is yet?" Everyone shook their heads.

"It's real sugar cane," continued Hanna. "A friend gave it to me. She saw kids eating it in Jamaica. If we lived in Jamaica we might eat this cane instead of candy. We'd eat other interesting things



too like breadfruit, plantains, and mangos."

Everyone chewed in silence until the end of the canes were ragged and tasteless.

"That's not bad stuff," said Mai Lin. "I wonder if sugar beets taste the same?"

"What are sugar beets?" asked Hanna.

Mai Lin looked surprised. "Sugar beet is what Alberta sugar is made from, silly!"

Hanna looked hurt. "I thought sugar came from sugar cane. I've never heard of sugar beets."

"Neither have I," said Louis and Chris, both at the same time.

Mai Lin looked a bit ashamed. "Sorry, I thought everyone knew about sugar beets. I've visited a farm in southern Alberta that grows them. That's how I know about them."

"Well, go on. What do they look like?" asked Louis.

Mai Lin shrugged. "Kind of ordinary, I guess. It's a whitish root, kind of like a big parsnip. It grows in the fields. Then it's dug up and sent to the sugar refinery. That's all I know."

Chris pulled a face. "If it's like parsnip it probably wouldn't taste too good raw," he said. "Pity we can't grow sugar cane in Alberta. Are there any other vegetables that are used to make sugar? It would be nice to have a chewy candy that you could pick instead of buying it from the store."

Mai Lin looked doubtful. "Let's see," she said, "potatoes, carrots, regular beets, turnips, and rutabagas. No, I can't think of anything else that's made into sugar."

Hanna laughed. "That's a good thing. Don't forget sugar's an other food. If you chewed on a sugary vegetable all day like you've just chewed on that sugar cane, you'd have rotten teeth."

Lesson Activity

Curriculum Topic

Factors influencing food choices - environment, agricultural availability and climate

Objectives

- 1) Students will identify food choices that are produced in Alberta.
- 2) Students will compare and discuss how the climate and environment influences different types of agriculture in Alberta.

TEACHER'S NOTE: To find out more about the Alberta sugar beet industry, have the class write to the Canadian Sugar Institute, 10 Bay Street, Suite 620, Toronto, Ontario, M5J 2R8, Phone: 416-368-8091, Fax: 416-368-6426. Ask for their pamphlet *The Story of Sugar*.

Materials Needed

the three agricultural pictures and profiles (included in the photo section with this resource)

the three agricultural profiles (printed on the reverse of each photo as well as pages 182, 183, and 184)

student copies of the *Nutritious Alberta Map*

Passport To Nutrition folders

wall map of Alberta

coloured string

coloured map pins

Procedure

- 1) Ask how many people know that sugar is produced in Alberta from sugar beets. Explain that people in the southern

part of the province probably know, but those in the central and northern parts of the province may not, because sugar beets are only grown in southern Alberta.

- 2) Explain to the class how our choice of food is influenced by the area and way in which we live. Write the key words - **Environment, Climate and Availability** on the board. Products grown in our home area may be less expensive, but the variety and availability depends on where we live, what the soil will grow and the climate.

Examples:

ENVIRONMENT - People who live in city apartments have to buy all their vegetables from the store because they cannot grow them. People who live on farms may buy only a few vegetables.

AVAILABILITY - People in Alberta who wish to eat lobster have to pay a lot of money for it. People who live by the Atlantic Ocean can catch lobster or buy it at less cost. Seafood costs more in Alberta because it has to be flown in and the price includes the cost of transportation.

CLIMATE - Field crops in Alberta like spring wheat, canola, or sugar beets can only be grown in the summer and in areas of the province where weather and

soil conditions are appropriate. Parts of the province to the north or at higher elevations to the west are largely covered by forest and lakes and have shorter growing seasons. Some crops require more days to mature than others and can be grown only in certain areas of the province.

Where crop farming cannot be done in the north, and lakes are plentiful, activities like fishing are important.

3) Ask students for more examples from their own experience. Examples: Why do oranges and grapefruit come from Florida? Where are the peaches and cherries sold in Western Canada grown? Why don't they grow in Alberta?

4) Divide the class into three groups. Give out the copies of the agricultural profiles: the fishing company to group one, the Hutterite colony to group two; and the sunflower producers to group three.

5) Explain that each of these agricultural profiles shows a very different but successful way of farming in Alberta. These three profiles are interesting examples of how some Albertans have tackled an agricultural problem in a different way from the more usual cattle ranching and grain farming. Each student group will study the profile and discuss among themselves all the factors that make it a successful way of farming in Alberta, giving special consideration to environment, climate and availability.

6) After the group discussion, each group will choose a leader who will present their farming profile to the rest of the class. The class will listen to the three presentations and list the risks of farming for each profile.

7) Have a class discussion comparing the three types of farming. List

differences and similarities on the board. Would any of the operations work in your area?

8) Have each student write three paragraphs, one paragraph on each of the three agricultural industries.

9) After the students have finished, have them attach the fourth stamp to the page of paragraphs. Add the page to the *Passport to Nutrition* folder.

Follow Up

1) Give out copies of the *Nutritious Alberta Map*. Locate and label the three areas mentioned in the profiles. Identify the student's home base. Draw and colour pictorial representations of the crops and industries found in their area. Add the map to the *Passport to Nutrition* folder.

2) Place the photos of the three agricultural industries around the wall map of Alberta. Run coloured string from the pictures to the correct locations on the map. Pin up the sugar beet story and run a string to the area of the province where sugar beets are grown (around Lethbridge).

3) Choose a CLUB 4 member of the week.

Northern Alberta - Westend Fish Producers and Packers

Note: Match this profile to the photo of the fish plant included in the photo section of this resource.

The small village of Jousard is located on the southern shore of Lesser Slave Lake in northern Alberta. It is a community of 453 people many of whom own farms in the surrounding area. It is also the home of WESTEND FISH PRODUCERS AND PACKERS, a fish plant operation.

The fishing industry is not a high profit industry because 75% of the profits go back into maintenance and repair of the equipment. Equipment is very costly. In order to make this industry work year round, the fisherman needs two sets of equipment. Boats, fuel, and fishing nets are needed in the summer. Skidoos, trucks and other winter equipment, as well as the nets and fuel, are needed for winter ice fishing. The plant needs upkeep all year round and refrigerated transport vehicles are essential to take the fish to the markets.

The plant operation begins with the arrival of the fish caught from several lakes in the Jousard area. The fish arrive in green plastic tubs and are weighed. The fishermen are paid for the weight of fish they bring to the plant. The price varies with the kind of fish and how popular it is. Whitefish, pickerel and trout are the fish most commonly caught here.

The fish are gutted and sometimes the heads are removed. Then the packing crew will weigh the fish into large blue tubs holding approximately 27 kilograms. A layer of ice is placed between each layer of fish to help keep them fresh. The blue tubs are then sent along a conveyor belt to be stamped according to the species and grade.

The packed and stamped fish is sent to Edmonton where it is held and redirected by the Fresh Water Fish Marketing Board. Some is sold in Edmonton but the bulk goes to Winnipeg where it can be processed. Depending on public demand it

can be filleted, scaled, deboned or crushed. From Winnipeg the fish goes to markets all over the world.

Whitefish and trout are sent to the U.S.A. Jackfish is considered a delicacy in France. Major shipments of other kinds of fish are sent to Poland, Europe and Saudi Arabia.

Most people expect fishing to be done in the summer, but the Jousard fish plant does its biggest volume of business during the winter months (September 15 - May 15) because fish, quality is very high during the winter season. Higher quality fish results in a higher price and higher wages for the fishermen.

In the summer, when the fish prices are low, many fishermen look for other jobs such as highway building, or they work on their farms raising pigs and cattle, or growing small amounts of grain. Unlike other areas of the province, the land here is not rich farm land. The farms are small and the short growing season limits the amount and kinds of agriculture. Because the northern part of the province is largely covered by dense forest, clearing enough land for a farm can be backbreaking work. There are many good lakes in this area though. This is why the fishing plant is a viable agricultural industry for this remote area.

The people living in this area are not self sufficient. They rely upon grocery stores in nearby High Prairie to buy food they cannot provide for themselves. Some people occasionally drive into Edmonton to buy in bulk. The prices are lower and there is a greater variety of goods. The people of the area can supplement their diets by hunting moose and other game as well as fishing. In addition to the produce grown on the farms, wild fruits and berries are plentiful during the summer.

AGRICULTURAL PROFILE

Central Alberta - The Scotford Hutterite Colony

Note: Match this profile to the photo of colony members plucking chickens. See the photo section of this resource.

The Scotford Hutterite Colony is located not far from Fort Saskatchewan, approximately a 30 minute drive from the city of Edmonton. The climate is milder than northern Alberta and there is more moisture than southern Alberta. The colony, like many others, has some easily cleared land and rich soil which supports a wide variety of agricultural products.

The Scotford Colony represents a relatively self reliant cooperative where everyone in the community works together on one large farm. The work is shared, machinery is owned in common, and the success or failure of their agricultural business is shared equally by the whole colony.

This community practices a type of mixed farming that provides for many of their needs. The variety of crops grown means that if one fails another will probably do fine. They grow wheat, oats, barley, canola and alfalfa.

Some of the grain produced is fed to the colony's livestock. The rest is stored in bins to be sold when the market offers a good price for the crop. The colony's managers are good business people and will not sell their products when prices are low.

The Scotford Colony has large garden plots and grows a wide variety of vegetables. Potatoes, carrots, lettuce, peas, corn, garlic, rhubarb and onions are commonly grown. Often as many as 15 different varieties of vegetables can be found in their gardens. These products are used by the community and are canned or frozen by the women. The extra produce is sold to the public at the colony's own market or at the farmer's markets in

and around the city. Fruits and vegetables not grown by the colony are purchased from nearby supermarkets.

The colony has a large dairy which produces milk and dairy products for their own use. Pigs, ducks, geese, chickens and lambs are also raised on the farm. Ham and sausages are made for the colony's consumption and the public can buy chicken and eggs from the government inspected hatchery on the farm."

The colony is self-sufficient, meaning it can grow, build, raise and make almost all of the items it needs to survive. The extra items sold provide money to buy the few items the colony needs. Shoes and clothing are made by the colony though the fabric and leather may be purchased. They can also repair and even make parts for their machinery though they may need to buy the metal.

There is a division of labour with the men doing the field work during the farming season and using the winter months to build furniture, do other woodwork, and repair the farm equipment. The women run the households, bake, cook and sew, and do farm jobs such as feeding the calves and working in the hatcheries. In summer they tend and weed the gardens. They do not work outside during the winter months and they do not do any field work.

The young children and senior citizens help out when they can and the teenagers are trained to work in the colony. They will decide their future trade based on their interests and what the colony needs.

The Scotford Hutterite Colony relies on the outside world for its medical care, machinery, fuel, heating supplies, sewing materials, nails and lumber. Candy treats are often purchased for the children. Flour, sugar, spices and other cooking staples are also purchased. The varied farm production makes this Hutterite colony one of the most self-sufficient ways of life found in Alberta.

Southern Alberta - Alberta Sunflower Seeds Limited

Note: Match this profile to the photo of the sunflower field included in the photo section of this resource.

The Alberta Sunflower Seeds Limited is located in southern Alberta at Bow Island. This is a dry area with lots of sun and winter chinooks. It has an enormous drawback though, a lack of moisture. This means that the land must be irrigated.

Irrigation is costly as farmers are charged for the irrigation and drinking water services. The water originates from St. Mary's Dam (south of Lethbridge) and is sent by canals and ditches to the desired destination.

Emmy and Tom Droog are the owners of the Alberta Sunflower Seeds Limited. They decided to start a business which was suited to the southern Alberta growing season and climate, but would not cost much money to start. Sunflower seeds seemed to be the answer. All they needed was their regular farm machinery with special attachments to harvest and plant the sunflower seeds.

The Droogs had previously grown wheat, but wheat farming has a quota and the price for wheat is set by the Canadian Wheat Board. There is no quota on sunflower seeds and the Droogs could do their own marketing and set their own prices.

They started by growing black sunflower seed and shipping it to a sunflower seed processing plant in Manitoba. At this plant the seed was cleaned and crushed to make sunflower seed oil. The Droogs had to pay the freight to ship the seed to the Manitoba plant and this was costly. They decided to eliminate the middle man and build a sunflower seed cleaning and bagging plant in Bow Island to market birdseed.

The Canadian government gave the Droogs a grant to build the Bow Island plant. The government did this to encourage farmers to diversify and grow other crops besides wheat. If a farmer is involved in different farm industries, he is less likely to become a victim of a poor harvest.

The Droogs encouraged local farmers in the area to diversify by contracting them to grow sunflower seed and to bring it to the new Bow Island cleaning plant.

The sunflower seed business is geared towards meeting the demands of the public. Bird lovers are willing to pay a higher price for small sunflower seeds to feed birds. The larger seeds (called spits) are fit for human consumption. Other seeds are used in the production of sunflower seed oil..

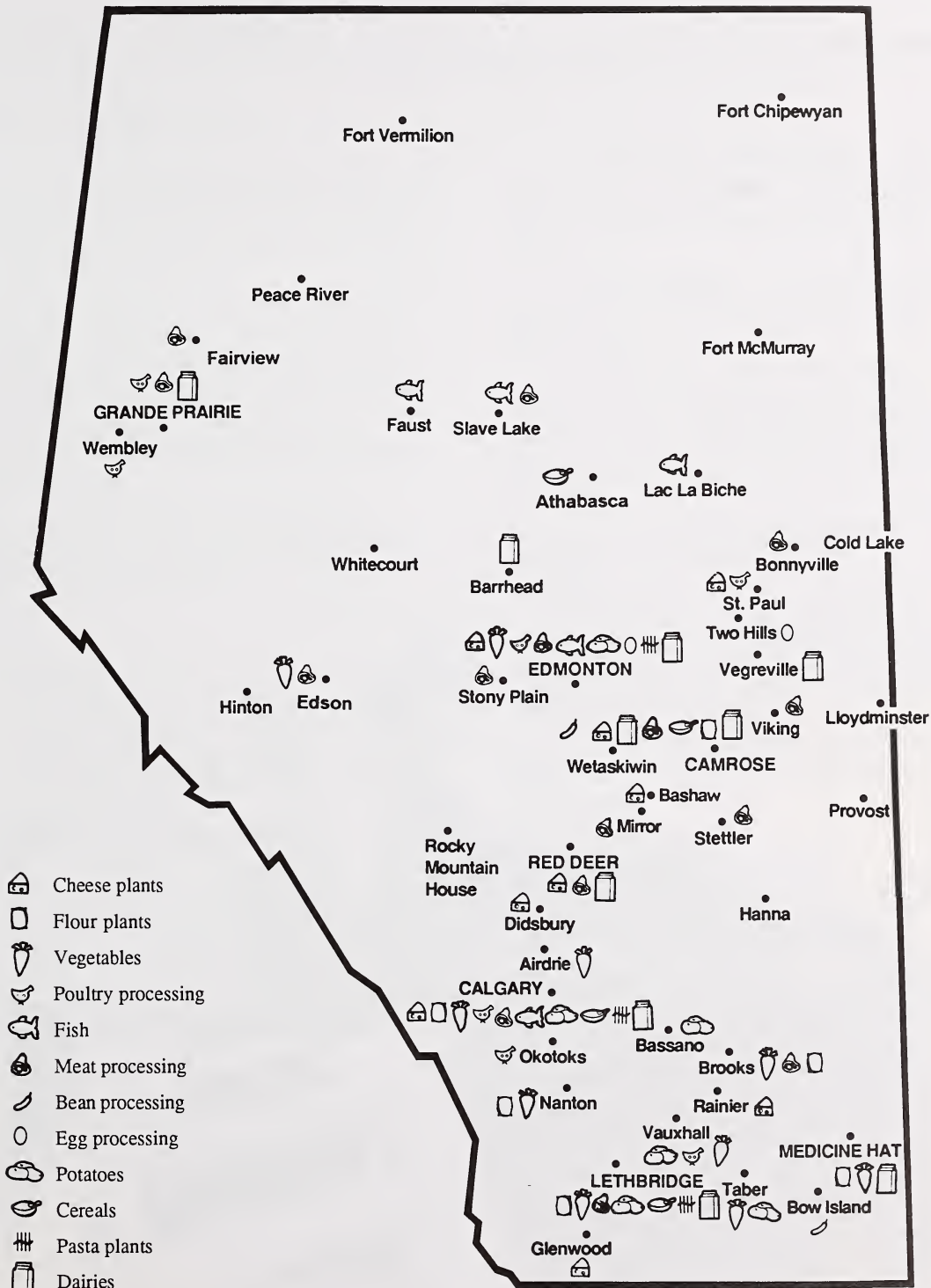
The sunflower crop is attractive to farmers in the dry Bow Island area because it doesn't need much water and may only need irrigating in June and July. Once established, the sunflower's two metre tap root will be able to suck up enough water to keep the plant healthy.

Sunflower seed is harvested in October, later than other crops, which means the farmer can concentrate on getting his grain crops off before the frost. The frost kills the sunflower plant and the seed head ripens off. At the end of October a sunflower cutting attachment is used with a combine to cut the heads off the stalk and separate the seeds. The stalks stay in the fields where they help trap moisture in the soil so that good soil is not lost to wind erosion in a dry winter. The seeds are cleaned and bagged in the Droog's plant.

A sunflower seed crop can only be grown on a piece of land once every four years because it depletes certain soil nutrients rather quickly. This means it is best used in a diversified farming program as a rotation crop.

The sunflower seed business is booming, but the Droog family is not self-sufficient. Mrs. Droog has a home garden to supply the family of four with vegetables, potatoes and salad greens. She also buys cauliflower and other vegetables from farmers in the area. She does her other grocery shopping every two weeks at a supermarket in the city.

Nutritious Alberta Map



Chris' Friend

Curriculum Topic

How cost influences food choice

The traffic roared around Chris and he put his hands over his ears. "It sure is noisy in the city," he yelled to his friend Al.

Al grinned. "You get used to it. I find the country noisy. All those birds waking you up in the morning. Come on, the lights have changed." The two friends rapidly crossed Jasper Avenue in downtown Edmonton and stood in line at the bus stop.

Chris looked at his friend. He looked thin and pale as though he'd been ill. "Al, are you okay?"

"Sure I am," said Al happily. "It's real nice to see you again. It seems years since we lived on acreages next to each other."

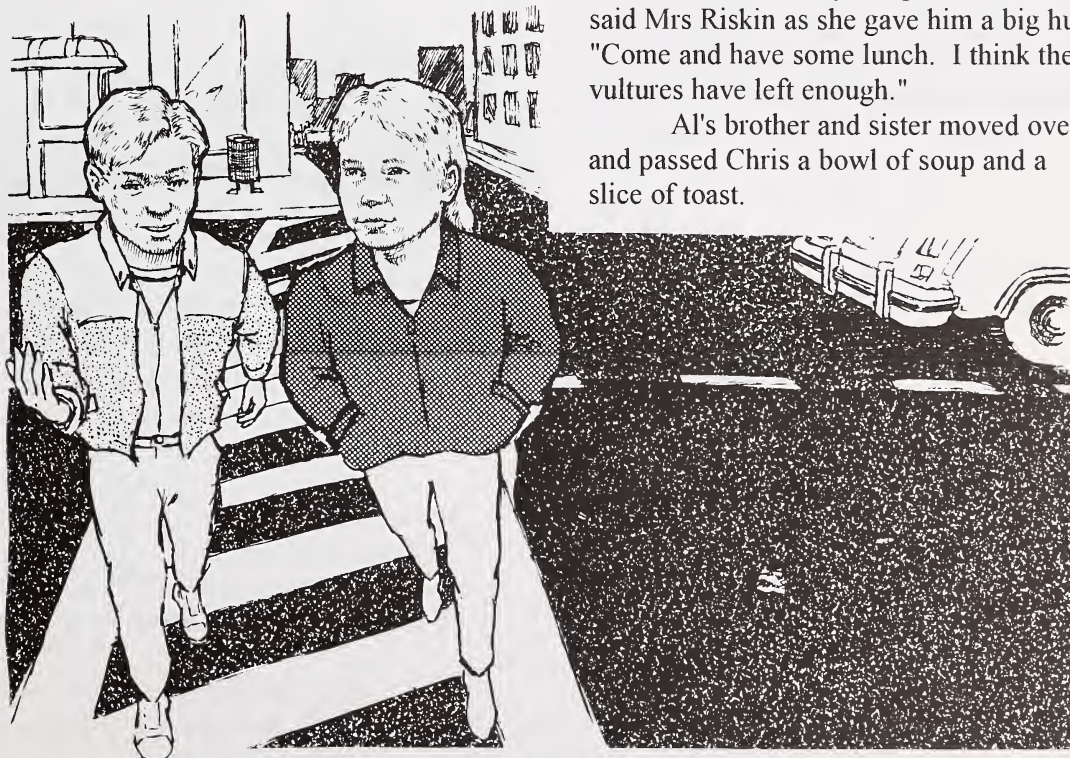
Chris nodded. "It's a pity your dad lost his job. Has he found one now that you've moved to the city?"

Al shook his head. "No. There doesn't seem to be many oil jobs at the moment. I think he and Mom are kind of worried about it. They don't say much to us kids."

The bus journey was short and Al led Chris up the steps to a small apartment.

"Good to see you again, Chris," said Mrs Riskin as she gave him a big hug. "Come and have some lunch. I think the vultures have left enough."

Al's brother and sister moved over and passed Chris a bowl of soup and a slice of toast.



"Here," said Chris before he sat down. "Mom sent something for you," and he held out a large plastic bag.

Mrs Riskin unpacked it with a cry of delight. "Look at this - some zucchini, lettuce and tomatoes from your garden, a jar of homemade rhubarb jam and some fresh peas. This is wonderful Chris. I'll write a note and thank her."

Chris, Al and Mrs Riskin sat down and ate the soup and toast. "You know, Chris, it's the fresh vegetables and fruit I miss the most now that we live in the city," commented Mrs Riskin.

Chris looked up. "But I saw a big supermarket down the street. Can't you get them there?"

There was a short silence and Mrs Riskin nodded slowly.

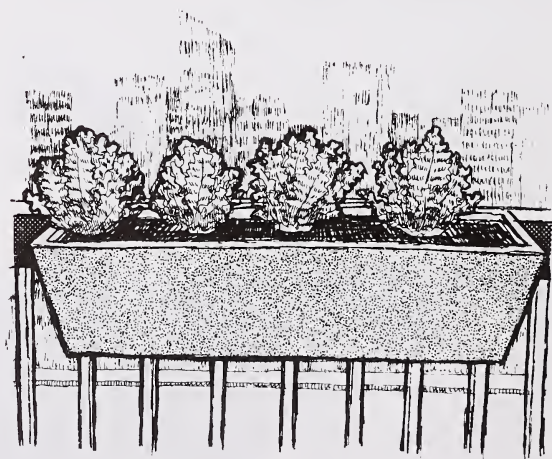
"It's not that easy at the moment Chris," she said. "Now that Mr Riskin isn't working we don't have much money, so there are a lot of things we cannot afford to buy. I just buy the things we really need when they are on sale. We don't get much variety."

"Still, it's not that bad," interrupted Al. "We eat a lot of bread and jam and macaroni dinners. I like those."

Chris looked around. "I guess when you live in an apartment you can't grow vegetables."

Mrs Riskin stood up and opened the patio door onto a small balcony. "We do our best though, Chris," she said, and pointed proudly to the balcony railing. There in a window box was some fresh lettuce growing. "Not bad for a 75 cent package of seeds, eh Chris?"

As Chris travelled home on the bus that evening, he thought about Al and how his mother and father tried to feed the family sensible meals on a small budget. "I wonder what I'd choose if I didn't have much money to spend?" he said to himself.



Lesson Activity

Curriculum Topic

Factors influencing food choices - cost

Objectives

- 1) Students will select a balanced meal for the least amount of money by completing a shopping worksheet.
- 2) Students will write a justification for their choices.

Materials Needed

student copies of *Shopping Worksheet*
Passport To Nutrition folders

Procedure

1) Review the factors influencing food choices discussed in the last lesson (environment, availability, climate). Introduce another very important factor of food choice - **Cost**.

2) Using the board, list some of the foods you and the students love to eat, but very seldom do because they are costly. Make a second list of foods that are eaten often in the summer but rarely in the winter because they are out of season and so the price goes up (eg. fresh strawberries).

3) Discuss with the class the fact that for many Canadians food cost is a prime concern. How can we get the best nutritional value for the least amount of money?

4) Give out the *Shopping Worksheet*. Explain that today's nutrition

activity will help the students discover if they can plan a balanced meal for the least amount of money. The activity will require them to utilize their knowledge about the four food groups, other foods and the nutrient values of foods they choose. On the second page of the sheet they must list their choices, total the cost of all the food items and write their justification for the choices made.

5) Collect the sheets at the end of the period. Check the responses and make some written comments on what they chose. Have the students attach the fifth stamp to the bottom of the sheet and insert into their *Passport to Nutrition* folders.

Follow Up

1) Rewrite the words to a favourite pop song to highlight some aspect of good nutrition. For example:

We like eating apples and milk,
Apples and milk, apples and milk (etc.)
(to the tune of Yellow Submarine)

2) Eating for 1 or 2 on a budget.
(like Hanna and her mother)

a. Discuss how 1-2 persons living on a budget can benefit from bulk sales. Some ideas include: they must have the storage area for a large purchase (freezer, shelves); they can repackage the food into 1-2 serving sizes; they can share the

purchase and the cost with another family and all will benefit.

b. Low cost meals often have small amounts of meat, such as stirfry, pastas, and casseroles. Have students plan a balanced meal for 4 persons with only 50g of meat available. Students should use all four food groups. Remind students that they can use alternatives to complement the meat portion.

3) Choose the student with the best selection on his/her *Shopping Worksheet* to be Club 4 member of the week.

LESSON 5

Shopping Worksheet

Name _____

Date _____

INSTRUCTIONS:

YOU are going to budget for a supper for yourself and a friend.

From the list of food choices, circle any items you like to create a nutritionally balanced supper for two people. You have a budget of \$6.00. You may spend less but not more. Your supper should follow *Canada's Food Guide*.

Each food choice listed is one serving.

On the last page:

- 1) list your food purchases and costs. Total the costs.
- 2) in the space below, write a paragraph explaining your choices.

Circle your food choices:

BREADS

1 slice of white bread	.05	1 slice of whole wheat bread	.05
1 hot dog roll	.15	1 white bun	.15

CANNED FOODS

tomatoes	.22	corn	.25
peas	.25	pork and beans	.53
chicken soup	.34	clam chowder	.45
cream of mushroom soup	.45	spaghetti and sauce	.75
peaches in syrup	.68	fruit cocktail in juice	.59
vanilla pudding	.52	pears in syrup	.62
tomato juice (250 mL)	.27	orange drink	.25
apple juice (250 mL)	.38	peanut butter	.08

MEATS

1 slice of bologna	.13	90g chicken	.49
90g lean hamburger	.35	1 turkey drumstick	\$1.10
1 fresh trout	\$1.39	1 wiener	.12

FROZEN FOODS

1 TV beef dinner frozen	\$3.25	6 cheddar cheese perogies	.50
french fries	.88	ice cream (125 mL)	.49
cream pie	.88	1 ham and pineapple pizza	\$1.50

FRESH PRODUCE

1 apple	.25	1/4 cantaloupe melon	.47
1 banana	.20	1/4 small head of cabbage	.18
1 carrot	.15	100g broccoli	.25
1/4 small iceberg lettuce	.27	1 potato	.12
1/2 green pepper	.18	100g mushrooms	.68
1 navel orange	.30		

DAIRY PRODUCTS

2% milk (250mL)	.21	whole milk (250 mL)	.22
chocolate milk (250 mL)	.23	125g cottage cheese	.37
125 mL fruit yogurt	.45	1 cheese slice (45g)	.28

BAKERY GOODS

1 doughnut	.30	1 chocolate chip cookie	.30
1 blueberry muffin	.35	1 slice of apple pie	.60
1 strawberry tart	\$1.00	1 brownie	.50

LESSON 5

Shopping Worksheet - page 2

a) List and total your circled food choices, indicating their food group.

FOOD CHOICE	GROUP	COST
-------------	-------	------

TOTAL COST_____

b) Explain your food choices. What decision making strategies did you use?

Louis' Grandma

Curriculum Topic

How cultural background affects food choices

Louis' arms were aching. He was pumping water from the old metal pump. It was hard work. He let the handle go and carried the brimming bucket up the path to the small cabin.

"Here, Kookum," he said using the Cree word for granny. "Boy, that's hard work. Why don't you move into Fort MacKay? They've got running water right into the houses!"

His granny patted his arm. "I've lived in the bush all my life. I don't want to move now. Besides, that's a good well with real sweet water. Sit down Louis. Take your time. Have a drink."

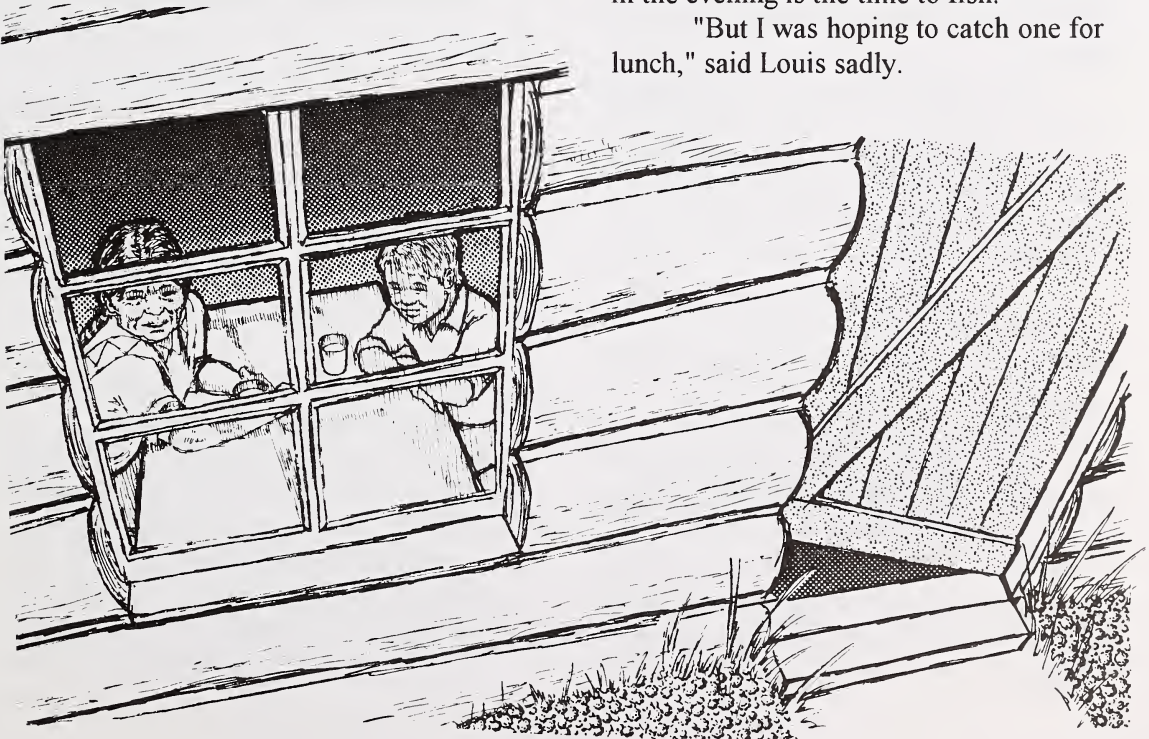
They both sat at the kitchen table

and looked out the window. Louis loved staying in his grandma's cabin. He could trap or fish with his cousins, hike in the bush or help his granny pick berries. He particularly liked the fall when his whole family gathered at the little house just outside Fort MacKay. Then it was one big party as everyone went gathering blueberries together on the banks of the Athabasca River.

"Went fishing this morning, Kookum," said Louis, "but I didn't catch anything."

Kookum nodded. "You didn't go early enough. Fish don't like sunshine. They hide at the bottom. Early morning or in the evening is the time to fish."

"But I was hoping to catch one for lunch," said Louis sadly.



"It's hungry you are?" asked Kookum as she stood up and lifted the lid from a steaming fry pan on the wood burning stove. A fragrant smell filled the kitchen.

Louis gave a whoop and nearly fell off his stool. "Fresh bannock," he yelled. "Good stuff, Kookum," and he swung her around the kitchen, the pan lid still in her hand.

Kookum patted Louis gently on the rear with the pan lid. "Come on boy. Give a hand with the salad while it cools," and they walked out into the garden.

While Louis picked the lettuce and some beet tops, Kookum found the patches of wild mint and wild onions that she had encouraged to grow at the edge of the bush clearing. She chopped everything together and served the fragrant salad with pieces of steaming bannock and a slice of moose meat.

"Why does your salad taste so good?" asked Louis as he ate the last bits. "There's no dressing on it, but it's real good."

"It's a taste of the wild," smiled his granny. "I'll show you. She took him out into the garden and showed him where the wild mint grew. She picked a leaf and rolled it in his hands. "Now smell," she instructed.

Louis held his hands up to his face and sniffed the fragrance of the wild mint. "That's it," he said, "that's why your salad tastes good."

Kookum nodded. "Town folk forget that wild herbs always make food taste good. Let's gather some to take home for your mother."

TEACHER'S NOTE: If you are doing the story as one lesson and the activity as another lesson, give out copies of the *Herb and Spice Fact Sheet* after the story and organize students to bring in herb samples for the activity.

Questions to Class: WHAT IS A HERB?
WHAT HERB IS MENTIONED IN THE
STORY?

Lesson Activity

Curriculum Topic

Factors influencing food choices - cultural background

Objectives

1) Students will sample herbs and spices and provide a description of their taste.

2) Students will become aware of the role culture plays in seasoning foods.

TEACHER'S NOTE: This lesson involves preparation. Before the lesson, students should read the *Herb and Spice Fact Sheet* and bring from home samples of the herbs and spices used in foods from their cultural background.

Materials Needed

student copies of the *Herb and Spice Fact Sheet*
lined paper for recording observations
herb and spice samples brought from home
wall map of Alberta
coloured string
coloured map pins
Passport To Nutrition folders

Procedure

1) Review the factors influencing food choices from lessons 4 and 5. (The students might like to use their *Passport to Nutrition* folders as a reference.) Explain that this lesson will deal with another factor influencing food choices - **cultural background** and the effect it has on the foods our families eat.

2) Discuss with the students the number of cultural backgrounds represented in the classroom and list them on the board. Choose a student from each group to name and describe a favourite ethnic dish cooked at home.

3) Explain that even though people from different countries may have lived in Canada for many years, they usually retain some favourite dishes that they like to cook as well as eating typical Canadian food. New immigrants to Canada may cook only their ethnic dishes. This is because people like to eat what is familiar to them. Around the world different herbs and spices are used and people miss them if they have to eat food that does not contain them. There may be religious reasons for eating certain foods, and a special dish may be associated with a happy celebration like spicy fruit cake at Christmas.

4) Ask the students for suggestions of foods associated with special occasions.

5) Explain that herbs and spices used in cooking are often what makes food taste different in other cultures. Many people cook meat but French people add garlic, East Indian people add curry, Greeks may add rosemary and Germans sometimes add dill. The Chinese are fond of ginger with their meat and Canadian natives flavour pemmican with crushed

juniper and saskatoon berries. These herbs and spices can make the same meat taste very different.

6) Ask which students have brought herb or spice samples. Choose one student at a time to introduce the sample and tell the class something about it. Then pass the sample around the class to let people smell it. (Some may have to be rubbed gently between the fingers.) If some are ground, shake a tiny sample in the palm of the hand and taste it.

7) As the samples come around, have students record the name of the herb or spice, their reaction to its smell or flavour, a description of its taste and which are their favourites.

8) Note any herbs or spices that are not found on the fact sheet. Add the name and some information about it to the bottom or back of the *Herb and Spice Fact Sheet*. (Add an extra page if needed.)

9) Have the students attach the sixth stamp to their sheets of observations and insert into their *Passport to Nutrition* folders along with the *Herb and Spice Fact Sheet*.

10) Pin the story by the wall map of Alberta and run a string to a marker at Fort MacKay.

Follow Up

1) Involve the class in one of the following activities:

a) Create a winter salad snack for the class from chopped cabbage, thinly sliced carrots, green onions and cucumber. Add some of the herbs or spices brought by the students for seasoning (eg. mint, dill and parsley). Serve and enjoy.

b) Spread crackers with processed cheese and have students sprinkle with their choice of herbs and spices for tasting.

2) Choose the student with the most unusual herb or spice as a CLUB 4 member of the week.

Herb and Spice Fact Sheet

BASIL has a sweet fragrance and is suited to tomato dishes. In India it is thought of as holy. The Italians consider basil a token of love. In ancient Greece it was a token of hate and only the ruler was allowed to cut it with a golden sickle.

BAY LEAF has a strong, slightly bitter taste and is often used in stocks, stews, and sauces. For many generations bay leaves have been a symbol of triumph, as they are related to the laurel tree. Ancient Greek doctors felt this herb promoted good health.

CARAWAY has a root that may be eaten like a carrot and its leaves are chopped into soups and salads. Caraway seeds are best known for their biting sweetness and can be added to cake batter. Caraway is a member of the parsley family and was originally used in Europe. Roman soldiers chewed caraway seeds to sweeten their breath, a practice that is sometimes used today.

CHERVIL enhances taste and is mostly used in combination with other herbs. Chervil symbolizes sincerity and is used in Lenten dishes for its cleansing properties. In the past its seeds were mixed with vinegar to cure hiccoughs!

CHIVES are the mildest flavoured member of the onion family. Chives have been used by the Chinese since 3,000 B.C. In the past the green shoots were eaten to "protect against the kiss of death."

DILL is a member of the parsley family. Many European people believed it was protection against witchcraft. The

Puritans gave "meetin' seeds" from the dill or fennel plant to hungry children during long church services.

FENNEL means aromatic hay in Latin because it has a sweet aroma and flavour. The Hindus used it to treat snake bite. Anglo Saxons considered it one of the nine sacred herbs and used its seed to fight against eye, head and stomach disorders.

GARLIC is a member of the lily family. It is one of the oldest herbs and was found in Tutankhamen's tomb. In legends it is often associated with witchcraft. Mohammedans believed it grew where Satan stepped in the garden of Eden. The medieval French wore it in ropes to protect against the plague and in Transylvania it was used to repel vampires.

GINGER flavours ginger ale and gingerbread. Its name has a Sanskrit origin meaning "shaped like antlers" as its twisted roots look like deer antlers. Queen Elizabeth I had gingerbread baked in the shape of her favourite courtiers. The colonial New Englanders served the roots in a candied form after dinner to aid digestion.

MINT is found most commonly as spearmint and peppermint. Spearmint is probably the oldest mint and dates back to the Old Testament. Ancient Hebrews walked on mint covered synagogue floors. Tabletops were rubbed with mint as a

symbol of hospitality during the Middle Ages. It adds flavour to such foods as salad greens and green peas and is commonly dried and used as mint tea.

ROSEMARY is a powerful herb and must be used sparingly, but it mixes well with almost any food. Its name means "dew from the sea." It is associated with remembrance and the Greeks believed it aided memory. Bridal bouquets contained rosemary to symbolize faithfulness and love.

SAGE is a member of the mint family and has a strong fragrance. It is used in mouthwashes and gargles to fight bacteria. It was once believed to make people wise.

THYME comes in 100 varieties, one of which is lemon thyme. Throughout the ages this herb has been used to cure melancholy, to ward off moths and aid digestion. During the Middle Ages thyme was woven into the scarves of knights as a symbol of courage. Thyme is often used with sage in dressing for poultry.

A Night at the Movies

Curriculum Topic

Peer pressure and food choices

"Here's a great place. Four seats together in the centre. Let's sit here, CLUB 4." Hanna eagerly pointed to a row of seats half way down the movie theatre.

One by one the four friends squeezed past several patrons already seated, plumped themselves down and began to talk among themselves.

"How much time have we got before the movie starts?" asked Mai Lin.

Chris checked his watch. "About 10 minutes, I think."

"Great, who'd like popcorn?"

"We all would," came the shout, so Mai Lin good naturedly edged her way down the row and out into the lobby.

Just as the theatre lights dimmed, back she came edging past everyone's knees. "Here, you'll have to share 'cause I could only carry two," she whispered giving a brimming container of hot buttery popcorn to Hanna and Chris and handing the other to Louis while she found her seat.

Four hands reached out for the popcorn, and four mouths crunched in unison to the opening music.

Twenty minutes later, the popcorn was finished and Louis was a little restless. "What's the matter?" whispered Mai Lin.

"It's that popcorn. It's made me really thirsty," muttered Louis. "I'm going to get some pop. Anyone else want some?"

"I do."

"I do."

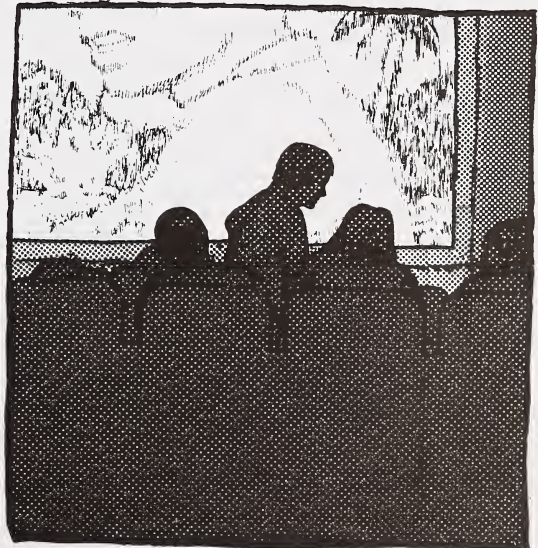
"I do," came three more whispers out of the dark.

This time it was Louis' turn to edge down the row past everyone's knees. Everyone had no sooner got settled when back he came again.

A couple at the end heaved a great sigh as Louis squeezed past and Mai Lin got an attack of giggles.

Unfortunately the movie was not very good. It started out as an adventure story but then became romantic in the middle.

"This is corny. I'm going to the bathroom," said Chris. "Anyone want anything while I'm up?"



"Here, get some candy we can share," said Hanna, passing Chris a couple of dollars.

"Not again," came a mutter from the couple down the row as Chris wriggled past them.

Chris was gone for ages and ages. "Where've you been?" asked Hanna when he eventually returned.

Chris grinned. "I met a friend out there," he whispered. "He hates the love stuff too so we played a video game until it was over. Here's your candy and I got some potato chips."

Hanna opened the box and divided the candy into four piles, then passed them down the row.

Chris opened the chips and passed them down.

"Wow, this is a feast," said Louis happily.

For a while everyone watched the movie. Then Hanna began to cough. "It's a chip," she gasped. "It's caught in my throat."

Chris thumped her on the back. Hanna carried on coughing.

"You'd better get a drink," suggested Mai Lin. "Anyone got any pop left?" No one had!

"There's a water fountain in the lobby," Louis remembered.

Hanna stumbled down the row and ran up the aisle to the fountain. The couple at the end turned to each other and raised their eyebrows. Mai Lin started to laugh.

Luckily the movie ended. The lights went on and the three friends went to find Hanna. She was by the water fountain, still red in the face but not coughing any more.

"What a boring movie," she said. "Did I miss anything exciting at the end."

"Not a thing," said Chris. "The best things were the snacks."

They all looked at each other guiltily.

"We did eat rather a lot of junk food," remarked Louis with a shrug. "But everyone eats that stuff at the movies. That's just the way it is."

Questions to Class: IS THAT THE WAY IT IS? WHAT DO YOU EAT AT THE MOVIES?

Lesson Activity

Curriculum Topic

Factors influencing food choices - peer pressure.

Objective

Students will determine the quality of their lunches or snacks by examining their garbage remaining from their own lunch.

TEACHER'S NOTE:

When the students eat their lunch, have them save all food containers, wrappings, or debris of any kind and carefully place them back into the lunchbox or bag. Do this on the day you plan to do this activity.

Materials Needed

one pair of rubber gloves to be used by the teacher when handling garbage
student copies of the *Garbage Analysis* worksheet
plastic sheets or newspapers on which to place garbage
Passport To Nutrition folders

Procedure

1) Review the factors influencing food choices from the previous lessons. Explain that this lesson will deal with another factor **peer pressure**.

2) Ask students to define **peer pressure** (pressure exerted by people of the same age group to influence an opinion).

3) Have the class think of examples in which they succumb to peer pressure in social situations (school dances - boys at

one end of the room, girls at the other), in dress choices (blue jeans), and in eating situations (no garlic sausage sandwiches because your friends won't sit near you!).

Peer pressure is probably the greatest determinant of eating habits for students in grades 6 - 12 because the peer group is such an important aspect of their lives.

4) Discuss lunches. Talk about the kinds of food eaten during lunch or recess which your friends want you to share. What foods are people teased about? List examples on the board.

5) Inform the class that they are going to become 'garbologists'. They will study their own lunch garbage in order to determine the food habits of their class.

6) (See Teacher's note.)
a) Divide the class into groups and give out the *Garbage Analysis* worksheets.
b) Have each student remove his or her own garbage one item at a time.
c) Have each student in the group list every item from the group on the *Garbage Analysis* worksheet and complete the other columns.

7) At the end of the analysis have everyone wash their hands. Make some generalizations about the data collected. (What was the most popular food, least popular, most nutritious, least nutritious?) From this evidence do class members or teachers eat wisely or should they improve their eating habits?

8) Have the students complete page 2 of the *Garbage Analysis* worksheet.

9) Have the students attach the seventh stamp to their *Garbage Analysis* worksheets and add them to their *Passport to Nutrition* folders.

Follow Up

1) Next day have students, if they wish to, choose one item from their snacks or lunches and describe why it is nutritious.

2) What you eat now affects you when you get older. This is especially true for milk products because of bone growth when you are young. It's important to eat a variety of food from the four food groups and to keep physically active throughout your life.

Have students try this:

Stand up, shift your hips forward, bend your knees slightly, round your shoulders inward, lower your head slightly and stick out your chin.

Now try walking around the room. Try standing in one spot for a period of time. Try to reach something on a high shelf or to brush your hair. (Mobility may be further complicated by using tensor bandages to wrap certain areas of the body.)

This may be what you're like when you're a grandparent. Keeping active and eating the right foods now and throughout your life will decrease the effects of aging. What you do now affects your future.

LESSON 7

Garbage Analysis

Name_____Date_____

As you list each item of food related garbage, list its name, check off the amount eaten, and identify the food group or if it's a food from the "Other Foods" group.

FOOD DEBRIS	UNTOUCHED	HALF-EATEN	EATEN	GROUP OR OTHER FOODS

Garbage Analysis- page 2

Using the evidence from the garbage analysis, write a paragraph giving your conclusion about the eating habits of the class. Does peer pressure affect our food choices?

Could peer pressure help alter these habits? Explain.

Lunch Out

Curriculum Topic

Selecting a balanced meal in a restaurant

Hanna opened one eye sleepily and looked out of the car window. The prairie stretched out to the horizon broken only by the occasional grain elevator, a few clumps of trees and some cattle grazing in the distance. She sat up with a jerk.

"Where are we Mom? I don't recognize anything."

"I'm not surprised." Her mother took her eyes off the road briefly and looked at Hanna. "You've been asleep since we left Red Deer and we've just passed Drumheller. You must have been tired."

Hanna yawned and nodded. "I was. We stayed up packing too late last night. Still it's nice to be on our way at last. I like holidays."

"So do I," agreed her mother and settled down to her driving.

"What time is it Mom?" asked Hanna after a few minutes. "I'm starving."

"I might have known," said her mother with a sigh. "I didn't want to wake you up when we came through Drumheller even though it was lunch time. But I don't know if there is anything on this road until we get to Brooks. If we see something we'll stop. Okay?"

"Okay," agreed Hanna and watched eagerly ahead for any signs of a town.

After about 10 minutes, Hanna's keen eye spotted a gas station sign.

"There might be something at the gas station, Mom," she warned.

Mrs Bogart slowed down. Sure

enough there was a small drive-in. Mrs Bogart turned into the entrance and rolled down the window.

"Hmm," she said. "There's not much choice. What shall we have, Hanna?"

Hanna looked at the menu. There was a variety of hamburgers, fries, ice cream and drinks. She shrugged.

"A BLT burger, fries and some milk please," she said.

Her mother looked at the list again carefully. "And I'll have a fishburger, coleslaw and orange pop please," she ordered.

Question to class: WHO HAD THE MOST NUTRITIOUS LUNCH?

Answer: They were both acceptable but could have been improved if Hanna had chosen coleslaw instead of fries and her mother had chosen milk instead of orange pop.

Lesson Activity

Curriculum Topic

What foods served in restaurants are nutritious?

Objectives

1) Students will use their nutrition knowledge to determine guidelines for selecting a balanced meal in a restaurant.

2) Students will create an ideal restaurant menu.

Materials Needed

three large coloured sheets of poster board
felt tip pen
lined writing paper for students
Passport To Nutrition folders

Procedure

1) Discuss the important factors (eg. health and dollar value) when selecting nutritionally balanced meals at eating establishments.

2) Use the board to list the types of eating places patronized by the students.

3) Ask the students to imagine that three new restaurants are about to open near the school. Title the three large sheets of poster board with one of the following names:

PANFULL OF PIZZA
HAMBURGER HEAVEN
RAZZMATAZZ RESTAURANT

out to name typical items that would be found on the menus in these three popular restaurants. Use the felt tip pen to write these suggestions down. Make sure the list for each restaurant includes snack and side dishes, main course items, desserts and drinks.

4) When the menus are completed, choose pairs of students to role play coming into the restaurant and ordering a balanced meal. (This activity could be made more fun by actually setting a table and two chairs at the front of the classroom so the activity can be acted out.)

5) After each pair have ordered, open a discussion by asking if any improvements could be made to the order. (Suggestions: omit the buns and butter, order a side salad that is light on the dressing, choose some fruit for dessert, substitute vegetables instead of fries, skip dessert.)

6) Have the students conclude the discussion by designing their ideal restaurant menu on the sheets of paper. They should make sure that all four food groups are represented in the choices. Have the students attach the eighth stamp to their menus and add them to their *Passport to Nutrition* folders.

Pin up the poster boards. Ask the students to use their knowledge of eating

Follow Up

1) Have the students check out local eating establishments. If place mat menus are available pin one up on the wall with the good food choices highlighted. If not, ask the students to write down the best choice of dishes offered in a local restaurant and place some of the suggestions on the wall.

2) Choose a CLUB 4 member of the week.

The Sleepover

Curriculum Topic
Eating while watching TV

TEACHER'S NOTE: This is an interactive story interspersed with several questions to ask the class.

There was no room to move in Mai Lin's living room. Sleeping bags covered the carpet and the sofa was back against the wall. Pop music blared from a ghetto blaster which was sitting on the coffee table beside a curling iron, and girls were everywhere.

The signs were unmistakable. Mai Lin and her sister were having a sleepover! Suddenly the music was switched off.

"What did you do that for, Mai Lin?" asked Hanna. "Was it too loud?"

Mai Lin grinned. "It's never too loud. It's time for the movie," and she moved forward to switch on the TV.

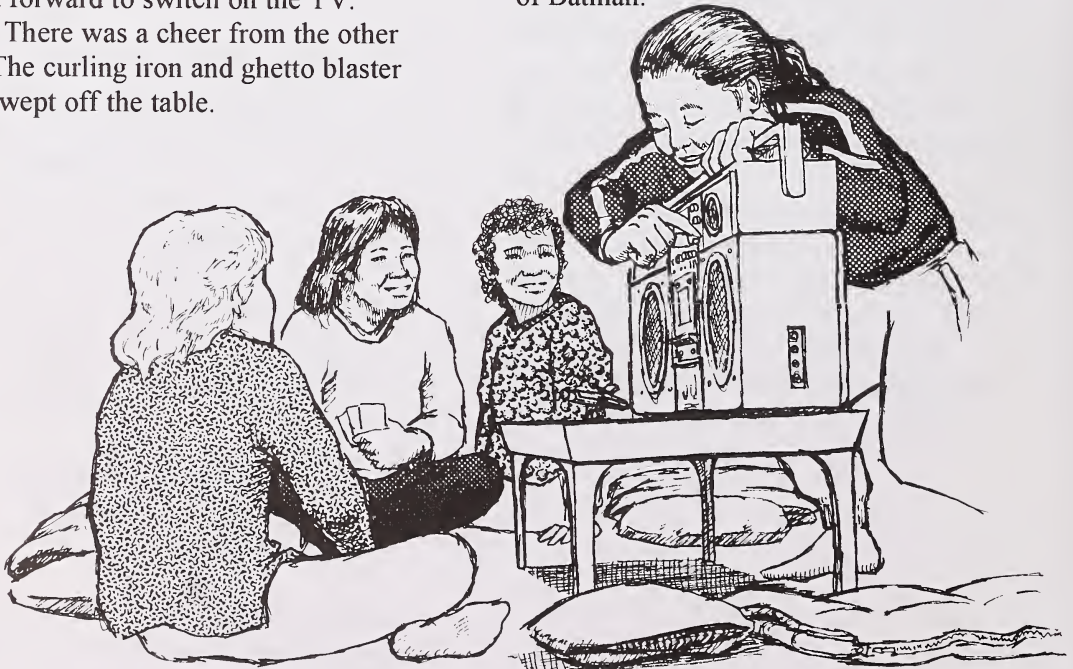
There was a cheer from the other girls. The curling iron and ghetto blaster were swept off the table.

"Got the snacks?" asked Mai Lin's sister, Cho San.

"Coming up," came the reply as several bodies rushed to the kitchen.

Question to Class: WHAT KIND OF TV SNACKS WOULD YOU EXPECT TO HAVE AT A SLEEPOVER?

Like magic, bottles of pop and a large bowl of buttered popcorn appeared on the coffee table. Everyone sprawled out on the sleeping bags and fixed their eyes on the screen. The familiar music sounded, the titles receded into the recesses of the screen and the girls settled down to watch the continuing adventures of Batman.



It was during the second set of commercials that Mr Lee came in.

"Hi, girls," he said. "How's the sleepover going?"

"Great," said Mai Lin. "But we're running out of popcorn."

"I thought that might happen," said Mr Lee and dropped a large grocery bag on the floor. "I've brought you some supplies from the store."

Hanna started to unpack the bag. "Hurray," she said, "here's some dip."

"Is there a box of chips?" asked another friend.

Mr Lee shook his head. "I thought you might like to try something else with the dip. Something a bit more nutritious."

Question to class: WHAT COULD BE SERVED WITH DIP AS AN ALTERNATIVE TO CHIPS?

Hanna delved into the bag again and brought up three cucumbers, a bunch

of celery and some carrots.

The girls looked at each other, but nobody said anything.

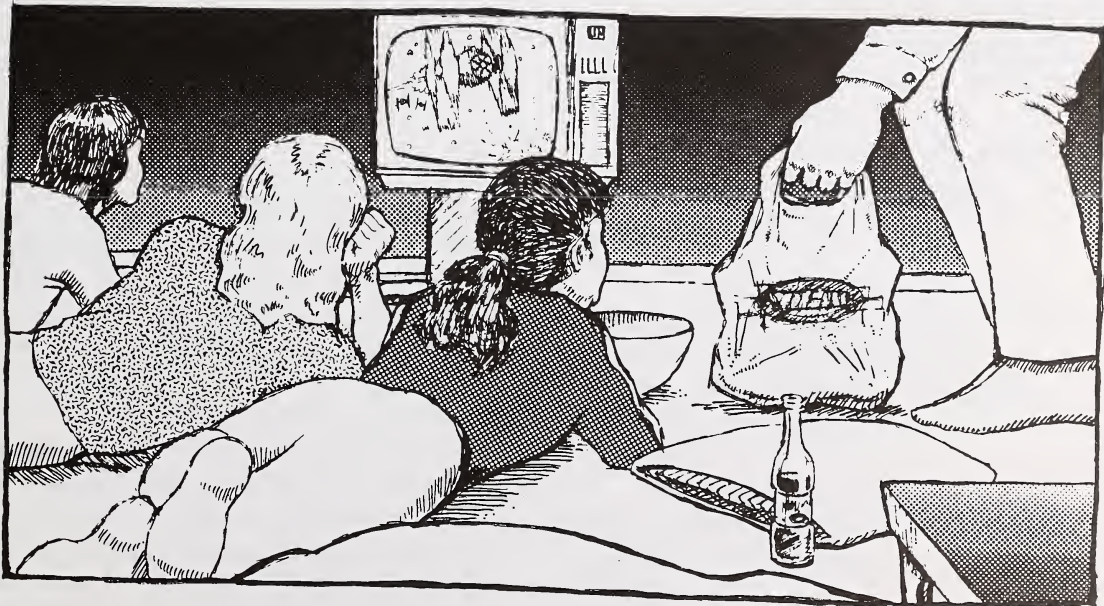
Just then the commercials ended and the movie started again.

"Here, I've seen this movie before so I'll prepare the celery and carrots," said Mai Lin's sister.

"I'll help," said Hanna, and she picked up the cucumbers.

Questions to Class: WHICH FOODS ARE EASIEST TO SNACK ON WHILE WATCHING TV - FRESH VEGETABLES, OR CHIPS AND CANDIES?
WHY? (No preparation is required.)

It didn't take long to peel and cut the carrots into sticks and slice the cucumbers and celery. Hanna placed the dip in the centre of a large plate and Cho San arranged the vegetables around it.



They quietly carried it to the coffee table and several hands silently helped themselves.

Throughout the rest of the movie Mr Lee kept tiptoeing in and quietly replenishing the vegetable plate. He even brought in two jugs of juice.

Eventually the movie finished and the TV was switched off.

"That's a great movie," said Mai Lin, stretching and yawning.

"Mmmm, and those were great snacks," said one of the girls. "Thanks Mr Lee. I never thought of having vegetables with dip instead of chips and stuff."

Mr Lee smiled. "You're welcome," he said. "I got the idea from CLUB 4."

"What's that?" asked one of the girls.

"Just a nutrition club," replied Mr Lee and winked at Hanna and Mai Lin.

Questions to Class: HOW MANY STUDENTS SNACK WHILE WATCHING TV?
HOW MANY STUDENTS EAT NUTRITIOUS SNACKS WHILE WATCHING TV?

Lesson Activity

Curriculum Topic

Foods eaten while socializing at home.

Objectives

- 1) Students will identify nutritious alternatives to the usual TV snacks.
- 2) Students will research a commonly eaten snack food.

Materials Needed

- popcorn kernels
- electric popping machine
- spice seasonings (eg. curry powder, chili powder, seasoning or garlic salt, cinnamon, parmesan cheese, dill, lemon pepper)
- 4 large bowls
- 4 spoons
- a paper cup for each student
- a sheet of lined paper for each student
- Passport to Nutrition* folders

Procedure

- 1) Write the phrase THE DANGER TIME FOR GOOD NUTRITION on the board. Ask the students to name all the traditional times and places for eating snacks. List the suggestions under the heading.
- 2) Make a second list of the snacks commonly eaten at those times (chocolate bars, pop, chips etc.). Ask the students what food group these often fall into (other foods). Discuss why they tend to be popular snack foods (small convenient packages with no preparation, often

advertised in TV commercials).

3) Ask why these snack choices are not considered wise choices (high in calories/ sugar, damage teeth, often eaten when doing things like watching TV).

4) Give out the lined paper. Ask the students to list a variety of nutritious snacks that could be alternatives to traditional TV snacks. They can be imaginative, but all snacks should be easily prepared.

5) While students are making the list, prepare the popcorn in the electric popper.

6) Explain that popcorn is a favourite snack. If eaten in moderation with only a little butter it is not a poor choice. It is not harmful to the teeth but it has very few nutrients.

7) Show the students the selection of spices. Explain that interesting seasonings could be an alternative to butter.

8) Divide the popcorn into four different bowls. Let the students vote for their four favourite seasonings from the selection and sprinkle one seasoning on each of the four bowls. Toss with the popcorn.

9) Using a spoon and paper cup, each student takes some popcorn from each bowl. Eat and enjoy the different flavours.

10) While eating the popcorn, ask some students to share their list of nutritious snacks.

11) Have the students attach the ninth stamp to their lists of nutritious snacks and add them to the *Passport to Nutrition* folders.

Follow Up

Either

1) Give the students an individual research project. Have them research the history of popcorn, where it came from, how it is used and recipes for its use.

2) Compile the research into a scrapbook about popcorn. Display it in the classroom.

Or

1) Have the students keep a one week record of the snacks each member of the family eats while watching television.

2) Discuss the records in class and have the students add them to their folders.

3) Choose the person with the most interesting snack suggestions as CLUB 4 member of the week.

A Little Bit of TLC

Curriculum Topic

What is a comfort food?

The skating rink was deserted except for two determined figures poised at one end.

Chris stood by the side, his scarf in his hand. "Ready Mai Lin? Ready Hanna?"

Both girls grinned, nodded and leaned forward, their eyes fixed on the barrier at the far end.

"On your mark. Get set. GO!" Chris dropped his scarf and the two girls raced forward as fast as they could skate.

"Hey, those two can really skate," said Louis admiringly, and he raised his voice. "Go for it, Hanna! Go for it, Mai Lin!" As if in response both girls lengthened their stride and picked up speed around the rink.

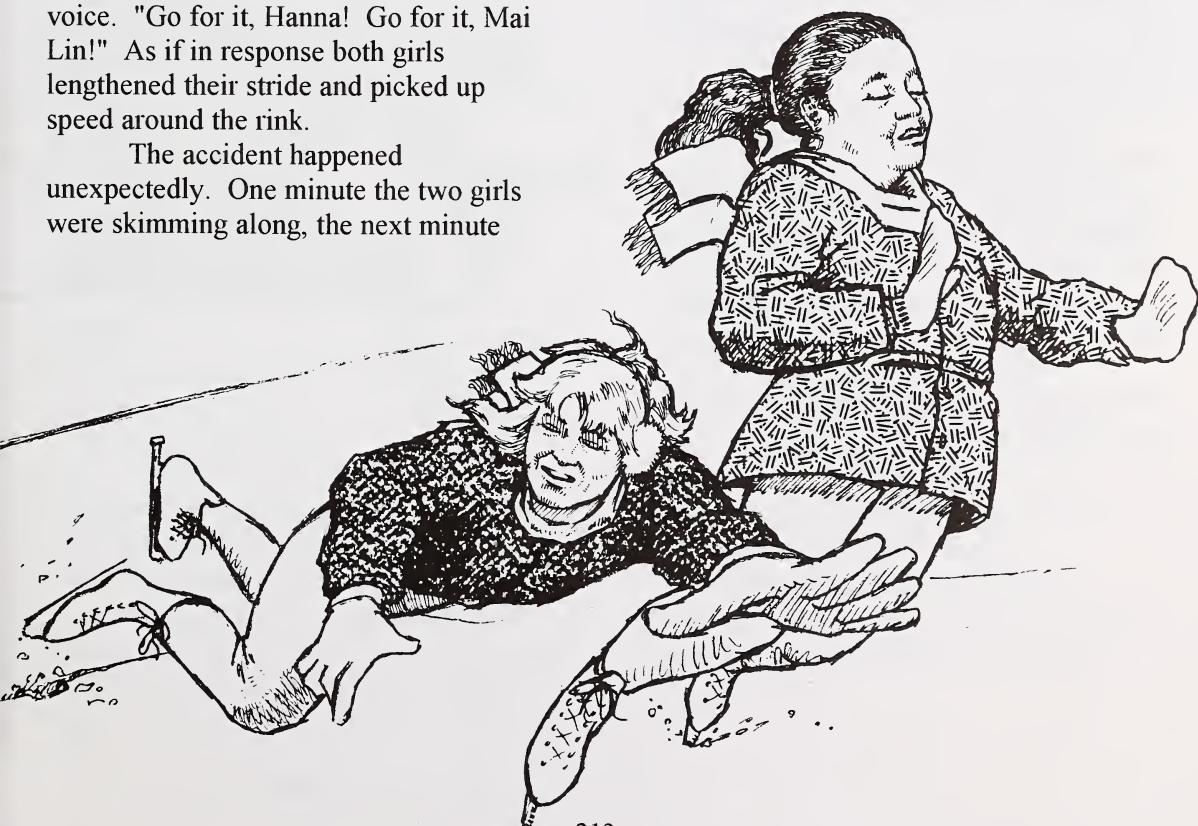
The accident happened unexpectedly. One minute the two girls were skimming along, the next minute

Hanna's picks caught in a crack in the ice. She stumbled. Arms flailing, she cannoned into Mai Lin and they were both down. With a great CRASH, they cannoned into the barrier.

Chris and Louis ran anxiously across the ice. "Are you two all right?"

Mai Lin was white and holding her head. Hanna was winded and was gasping in pain as she tried to draw air back into her lungs. The boys helped them up.

"Better go to Hanna's house," said Chris. "It's the closest."



"What a way to end a race," said Hanna's grandma as she settled the two girls into comfortable chairs and gently bathed their bumps and bruises. "But I think you'll live to try again. Now Chris, there's milk in the fridge. Pour a litre into a saucepan and you and Louis can make some hot chocolate. There is nothing like a hot drink to make you feel better."

Ten minutes later, CLUB 4 were sitting around the kitchen table, their hands wrapped around comforting mugs of hot chocolate. The colour was coming back into the two girls' cheeks and everyone was feeling more cheerful.

"Thanks Grandma," said Hanna. "You're really good at giving out TLC."

"What does that mean?" asked Louis.

"TLC - Tender Loving Care," explained Hanna. "Grandma always knows how to make people feel better and she always gives me a hot drink when I'm hurt or upset. She's done it ever since I was a baby."

Grandma nodded. "Hot drinks are comforting," she said.

Louis took a great mouthful of hot chocolate. "You're right," he said with a grin. "I'm feeling much better."

Hanna and Mai Lin both punched his arm.

"At least I was," said Louis as he held out his mug. "But maybe I should have another cup!!"



Lesson Activity

Curriculum Topic

Foods eaten when happy, sad, ill, for reward, or punishment.

Objectives

- 1) Students will define the role of comfort foods by playing a word association game.
- 2) Students will suggest some nutritious alternatives to unwise choices of comfort foods.

Materials Needed

- one index card for each student
- pens
- Passport to Nutrition* folders
- student copies of *Passport to Nutrition*

Procedure

- 1) Write the term COMFORT FOOD on the board. Ask if anyone can explain what it is.
- 2) Share with the students your favourite comfort food as a child. Explain the circumstances in which you had it and why you liked it (treat, reward, part of TLC when sick or hurt).
- 3) Ask everyone to close their eyes for a few moments and remember a time as a small child when they were sick. What foods were given to them? After a few seconds ask them to open their eyes and put up their hands if they remembered a comfort food they were given at that time. List some of the answers on the board.
- 4) Look at the variety of answers

and explain that often people will have their own special comfort food according to where they lived, their family or cultural background and their life experiences.

- 5) Write the following words on the board and have students list them on their index cards: **Christmas (or Hanukkah or any other holiday celebrated in your class), birthday, accident, sickness, cold day, hot day, camp, Halloween, reward, punishment, Easter**

6) Have students divide into pairs to play the word association game. One student will read a randomly selected word from the card. The second student will instantly write down beside that word, the first food association it brings to mind. Then, reverse the process. This is done until all words are complete. The students compare answers and see where they share experiences and where they differ.

- 7) Still in pairs, have the students discuss their food associations. Have them identify any unwise food choices and try and suggest alternative choices that could still act as comfort foods.

8) Have the students attach the tenth stamp to their list and place them in the in the *Passport to Nutrition* folders.

Follow Up

1) In an art period create a wall mural showing people and occasions associated with comfort foods.

2) Around the mural add written paragraphs explaining the significance of the different foods.

3) This is the final activity in the *Passport to Nutrition* unit. Plan a special activity to present the students with their *Passport to Nutrition*. Have them take home their folders to use for reference. They now have enough knowledge to be good consumers and live a healthy life style.

Passport To Nutrition

Official Passport Form

I

declare that I have completed the journey to good nutrition.

I will use *Canada's Food Guide* to help make wise food choices.

I will do some form of exercise each day.

I will limit my extras.

I will become aware of the foods produced in Alberta.



I have therefore been accepted as a member of CLUB 4.

Teacher's signature



Northern Alberta - Westend Fish Producers and Packers

The small village of Joussard is located on the southern shore of Lesser Slave Lake in northern Alberta. It is a community of 453 people many of whom own farms in the surrounding area. It is also the home of WESTEND FISH PRODUCERS AND PACKERS, a fish plant operation.

The fishing industry is not a high profit industry because 75% of the profits go back into maintenance and repair of the equipment. Equipment is very costly. In order to make this industry work year round, the fisherman needs two sets of equipment. Boats, fuel, and fishing nets are needed in the summer. Skidoos, trucks and other winter equipment, as well as the nets and fuel, are needed for winter ice fishing. The plant needs upkeep all year round and refrigerated transport vehicles are essential to take the fish to the markets.

The plant operation begins with the arrival of the fish caught from several lakes in the Joussard area. The fish arrive in green plastic tubs and are weighed. The fishermen are paid for the weight of fish they bring to the plant. The price varies with the kind of fish and how popular it is. Whitefish, pickerel and trout are the fish most commonly caught here.

The fish are gutted and sometimes the heads are removed. Then the packing crew will weigh the fish into large blue tubs holding approximately 27 kilograms. A layer of ice is placed between each layer of fish to help keep them fresh. The blue tubs are then sent along a conveyor belt to be stamped according to the species and grade.

The packed and stamped fish is sent to Edmonton where it is held and redirected by the Fresh Water Fish Marketing Board. Some is sold in Edmonton but the bulk goes to Winnipeg where it can be processed. Depending on public demand it can be filleted, scaled, deboned or crushed. From Winnipeg the fish goes to markets all over the world.

Whitefish and trout are sent to the U.S.A. Jackfish is considered a delicacy in France. Major shipments of other kinds of fish are sent to Poland, Europe and Saudi Arabia.

Most people expect fishing to be done in the summer, but the Joussard fish plant does its biggest volume of business during the winter months (September 15 - May 15) because fish quality is very high during the winter season. Higher quality fish results in a higher price and higher wages for the fishermen.

In the summer, when the fish prices are low, many fishermen look for other jobs such as highway building, or they work on their farms raising pigs and cattle, or growing small amounts of grain. Unlike other areas of the province, the land here is not rich farm land. The farms are small and the short growing season limits the amount and kinds of agriculture. Because the northern part of the province is largely covered by dense forest, clearing enough land for a farm can be back-breaking work. There are many good lakes in this area though. This is why the fishing plant is a viable agricultural industry for this remote area.

The people living in this area are not self sufficient. They rely upon grocery stores in nearby High Prairie to buy food they cannot provide for themselves. Some people occasionally drive into Edmonton to buy in bulk. The prices are lower and there is a greater variety of goods. The people of the area can supplement their diets by hunting moose and other game as well as fishing. In addition to the produce grown on the farms, wild fruits and berries are plentiful during the summer.



Central Alberta - The Scotford Hutterite Colony

The Scotford Hutterite Colony is located not far from Fort Saskatchewan, approximately a 30 minute drive from the city of Edmonton. The climate is milder than northern Alberta and there is more moisture than southern Alberta. The colony, like many others, has some easily cleared land and rich soil which supports a wide variety of agricultural products.

The Scotford Colony represents a relatively self reliant cooperative where everyone in the community works together on one large farm. The work is shared, machinery is owned in common, and the success or failure of their agricultural business is shared equally by the whole colony.

This community practices a type of mixed farming that provides for many of their needs. The variety of crops grown means that if one fails another will probably do fine. They grow wheat, oats, barley, canola and alfalfa.

Some of the grain produced is fed to the colony's livestock. The rest is stored in bins to be sold when the market offers a good price for the crop. The colony's managers are good business people and will not sell their products when prices are low.

The Scotford Colony has large garden plots and grows a wide variety of vegetables. Potatoes, carrots, lettuce, peas, corn, garlic, rhubarb and onions are commonly grown. Often as many as 15 different varieties of vegetables can be found in their gardens. These products are used by the community and are canned or frozen by the women. The extra produce is sold to the public at the colony's own market or at the farmer's markets in and around the city. Fruits and vegetables not grown by the colony are purchased from nearby supermarkets.

The colony has a large dairy which produces milk and dairy products for their own use. Pigs, ducks, geese, chickens and lambs are also raised on the farm. Ham and sausages are made for the colony's consumption and the public can buy chicken and eggs from the government inspected hatchery on the farm.

The colony is self-sufficient, meaning it can grow, build, raise and make almost all of the items it needs to survive. The extra items sold provide money to buy the few items the colony needs. Shoes and clothing are made by the colony though the fabric and leather may be purchased. They can also repair and even make parts for their machinery though they may need to buy the metal.

There is a division of labour with the men doing the field work during the farming season and using the winter months to build furniture, do other woodwork, and repair the farm equipment. The women run the households, bake, cook and sew, and do farm jobs such as feeding the calves and working in the hatcheries. In summer they tend and weed the gardens. They do not work outside during the winter months and they do not do any field work.

The young children and senior citizens help out when they can and the teenagers are trained to work in the colony. They will decide their future trade based on their interests and what the colony needs.

The Scotford Hutterite Colony relies on the outside world for its medical care, machinery, fuel, heating supplies, sewing materials, nails and lumber. Candy treats are often purchased for the children. Flour, sugar, spices and other cooking staples are also purchased. The varied farm production makes this Hutterite colony one of the most self-sufficient ways of life found in Alberta.



Southern Alberta - Alberta Sunflower Seeds Limited

The Alberta Sunflower Seeds Limited is located in southern Alberta at Bow Island. This is a dry area with lots of sun and winter chinooks. It has an enormous drawback though, a lack of moisture. This means that the land must be irrigated.

Irrigation is costly as farmers are charged for the irrigation and drinking water services. The water originates from St. Mary's Dam (south of Lethbridge) and is sent by canals and ditches to the desired destination.

Emmy and Tom Droog are the owners of the Alberta Sunflower Seeds Limited. They decided to start a business which was suited to the southern Alberta growing season and climate, but would not cost much money to start. Sunflower seeds seemed to be the answer. All they needed was their regular farm machinery with special attachments to harvest and plant the sunflower seeds.

The Droogs had previously grown wheat, but wheat farming has a quota and the price for wheat is set by the Canadian Wheat Board. There is no quota on sunflower seeds and the Droogs could do their own marketing and set their own prices.

They started by growing black sunflower seed and shipping it to a sunflower seed processing plant in Manitoba. At this plant the seed was cleaned and crushed to make sunflower seed oil. The Droogs had to pay the freight to ship the seed to the Manitoba plant and this was costly. They decided to eliminate the middle man and build a sunflower seed cleaning and bagging plant in Bow Island to market birdseed.

The Canadian government gave the Droogs a grant to build the Bow Island plant. The government did this to encourage farmers to diversify and grow other crops besides wheat. If a farmer is involved in different farm industries, he is less likely to become a victim of a poor harvest. The Droogs encouraged local farmers in the area to

diversify by contracting them to grow sunflower seed and to bring it to the new Bow Island cleaning plant.

The sunflower seed business is geared towards meeting the demands of the public. Bird lovers are willing to pay a higher price for small sunflower seeds to feed birds. The larger seeds (called spits) are fit for human consumption. Other seeds are used in the production of sunflower seed oil.

The sunflower crop is attractive to farmers in the dry Bow Island area because it doesn't need much water and may only need irrigating in June and July. Once established, the sunflower's two metre tap root will be able to suck up enough water to keep the plant healthy.

Sunflower seed is harvested in October, later than other crops, which means the farmer can concentrate on getting his grain crops off before the frost. The frost kills the sunflower plant and the seed head ripens off. At the end of October a sunflower cutting attachment is used with a combine to cut the heads off the stalk and separate the seeds. The stalks stay in the fields where they help trap moisture in the soil so that good soil is not lost to wind erosion in a dry winter. The seeds are cleaned and bagged in the Droog's plant.

A sunflower seed crop can only be grown on a piece of land once every four years because it depletes certain soil nutrients rather quickly. This means it is best used in a diversified farming program as a rotation crop.

The sunflower seed business is booming, but the Droog family is not self-sufficient. Mrs. Droog has a home garden to supply the family of four with vegetables, potatoes and salad greens. She also buys cauliflower and other vegetables from farmers in the area. She does her other grocery shopping every two weeks at a supermarket in the city.



Explore Nutritious Alberta

Appendix

Teacher Information

When teaching young children about food and nutrition, there will likely be many areas in which you will need additional background information so that you can make sound judgments about what to tell the children.

This section is intended to provide you with that background information.

Recommended Nutrient Intakes (RNI)

The RNIs are established by a committee of nutrition experts under the auspices of Health Canada. They are reviewed and revised regularly, most recently in 1990.

The current RNIs are based on the most recent information available. For each nutrient about which enough is known, a recommendation can be made for an intake which will not only prevent deficiency diseases, but also maintain a body pool of that nutrient. Committees of different countries may decide to recommend different body pool levels; and thus the recommended intakes for one or more nutrients may vary between countries. In the U.S., the RDA (Recommended Dietary Allowances) differ in several respects from the Canadian RNIs. Many nutrition resources are prepared in the U.S. and can be purchased in Canada. If you are considering using any of these, examine carefully any recommendations for nutrient intake so that the children do not receive conflicting information.

The RNIs are not intended to establish a rigorous daily recommendation but rather they reflect an adequate average daily intake over a period of a few days or weeks. The RNIs take into account individual variability of requirement, and will be adequate for virtually all people. Anyone whose intake of a nutrient is consistently below the RNI is said to be at risk for that nutrient.

For those nutrients about which enough information is available, a safe range of intake has been established. For some nutrients, there are known toxic effects of high intakes; so for most nutrients, the safe range of intake falls reasonably close to the RNI.

A copy of the RNIs is available in the library; a summary of the recommendations is included in *Nutrient Value of Some Common Foods*, provided with your material.

Reasonable Daily Intake

The Reasonable Daily Intake is an estimate of the probable daily consumption of a food when it is included in the diet of Canadians. It is a term of reference used to evaluate the nutritional contribution of that food to the diet. Reasonable Daily Intakes are specified by Health Canada. For most foods, the RDI is considered to be one average serving. Exceptions are foods like milk and bread, which are normally consumed several times daily.

Enrichment Of Foods

Reasonable Daily Intakes are used as a term of reference for laws regarding enrichment of foods with vitamins or minerals. RDIs of foods selected for enrichment must have specific minimums and maximums of any nutrient added to the food. The exact amount added must be stated on the label. The lower limits generally represent 40-75% of RNIs. Some enrichment is mandatory (white flour, evaporated milk); other enrichment is optional (fruit juice).

Manufacturers are permitted, by law, to make claims that their food products are "good" or "excellent" sources of a nutrient depending upon the amount of the nutrient provided by a Reasonable Daily Intake of the food.

"Better" Or "Best" Concept

Within each food group, some foods will be better choices than others. The judgment is based on the nutrient density of the food. Nutrient density is the proportion of nutrients, particularly the key nutrients for the food group in question, relative to the energy (kilocalories) provided by a food.

If a reasonable daily intake of a food provides all or most of the RNI for the key nutrients, without providing a disproportionately high number of calories, then the nutrient density of that food is high, and it would be a "best" choice.

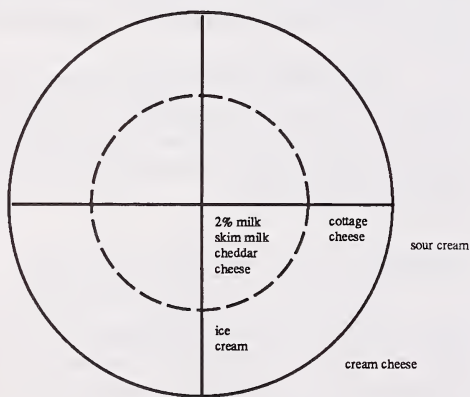
Nutrient density can be judged by comparing the amount of key nutrients in, say, 100 grams of a good with the amount of key nutrients in the same weight of another food, or in one serving of each food.

Example:

	One Serving	Calories	Am't of Key Nutrient
Milk, 2%	250 ml	129	315 mg Ca
Milk, skim	250 ml	90	317 mg Ca
Cheddar Cheese	50 g	169	277 mg Ca
Cream Cheese	48 g	147	33 mg Ca
Cottage Cheese	125 ml	213	161 mg Ca
Ice Cream	125 ml	141	92 mg Ca
Sour Cream	15 ml	16	12 mg Ca

The RNI for calcium for a nine-year-old is 700 mg; 3 servings of milk would provide this much calcium but 3 servings of sour cream would not.

When using a circle divided into quarters to represent the four food groups, you can place the most nutrient-dense foods toward the centre. Those foods with a smaller proportion of key nutrients can be placed towards the periphery. Foods with few of the key nutrients compared to kcalories would move off the circle altogether and into the "other foods."



Sometimes we need to make arbitrary judgments about foods. For example, ice cream might be acceptable as a "milk" food for young children, who have a higher proportionate need for kilocalories to calcium than adults do. Most adults don't need the extra calories ice cream provides, and for them, ice cream would be considered an "other food."

As a general guideline, if processing steps involve addition of sugars, fats, or both to a food, then that food will be lower in nutrient density and therefore less likely to be the "best" choice in a food group.

Function Of Foods "GO" "GROW," and "GLOW"

A nutrient may fulfil several functions in the human body. Within each food group, the collective functions of the key nutrients define a function for the food group.

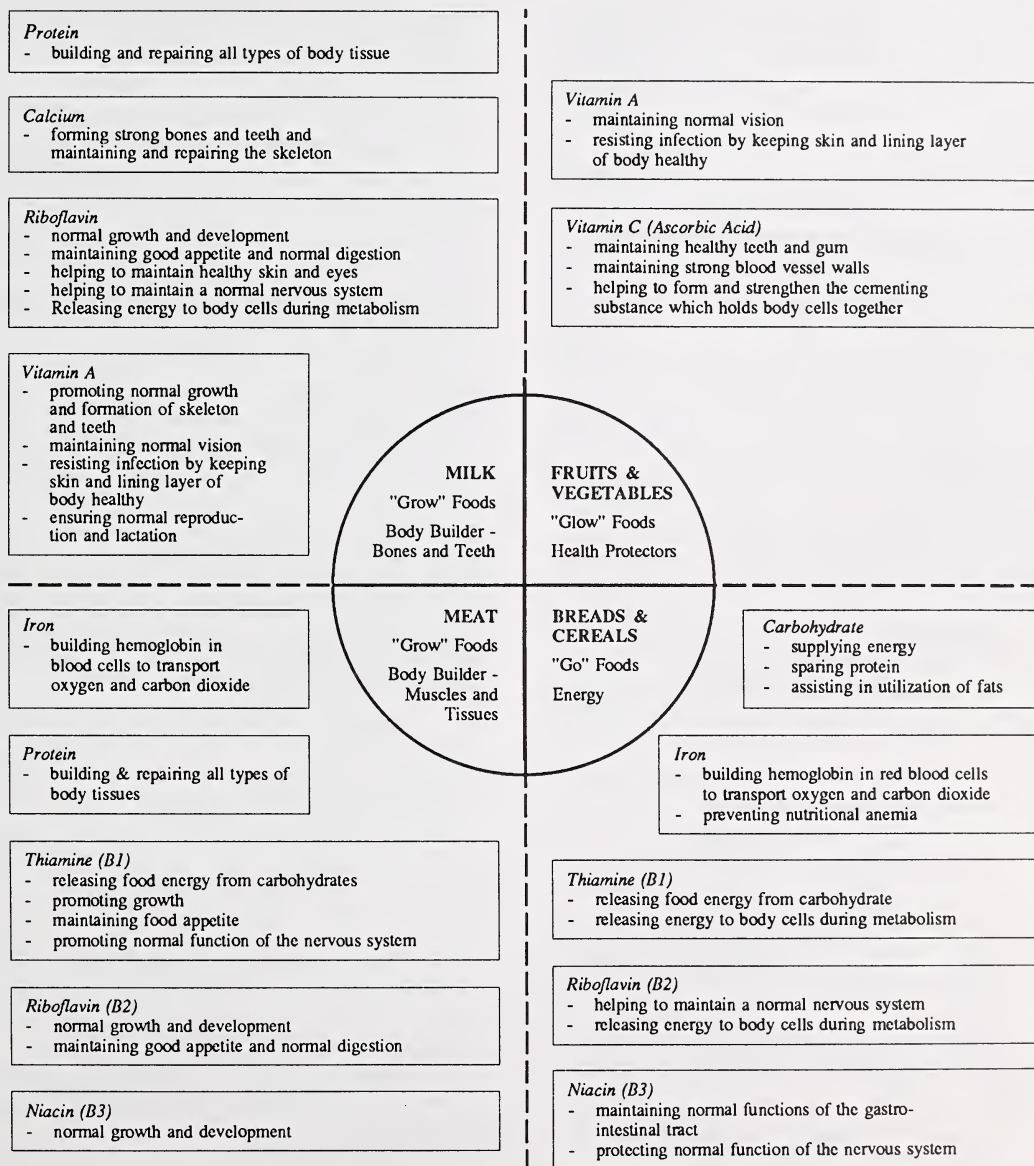
Example: The key nutrients in Grain Products are carbohydrate, iron, and the B vitamins. Carbohydrates provide a source of food energy. One of the functions of the B complex is to maintain normal digestion and to release food energy from the carbohydrates into body cells during metabolism. Thus, Grain Products provide energy: they are "GO" foods.

The illustration on the next page shows the functions of the food groups.
(see Page 6 of *Nutrition: The Ins and Outs*)

Function of Nutrients

(see Page 11 of *Nutrition: The Ins and Outs*)

The illustration below shows the functions of the food groups.



Unusual Vegetables

Artichoke - cultivated for its head, usually dark green, and from 3-5" in diameter, resembles a pear shaped thistle, with stiff, thick leaves which overlap inside the dense covering of the leaves in the heart. The edible portions are the base of each leaf and the heart. The heart is often eaten in salads or casseroles.

Asparagus - is planted below the ground 8-10" and grows as a stalk. It is picked when the tip breaks the surface of the ground. It is a member of the lily family. It is best in the spring, often steamed and served whole.

Avocado - has a thick green skin, either smooth or bumpy. The flesh is pale green, thick and buttery with a nutty taste. It spreads like butter and is eaten uncooked in salads or as a spread or dip. It is grown in California and Brazil.

Bamboo Shoots - young shoots, sprouts and fruit are grown in tropical countries. They are cooked and the fruit is considered to be a delicacy.

Bean Sprout - usually the sprouts of the mung or soy that sprout. Mung beans are tiny and green and soaked several hours before being placed in cans for sprouting. They are held at a constant temperature (18 C) for 4 days, and sprinkled with water every 6 hours. A sprout is 1-2" long and rich in Vitamin A.

Belgian endive/chicory - a white root vegetable, eaten either raw in salads or cooked.

Brussel Sprouts - green buds which have the appearance of tiny cabbages, are cooked in boiling water.

Celeriac - a variety of celery which has a large brownish edible root, eaten cooked. It does not develop a large stalk above the ground.

(Swiss) chard - (white beet) - cultivated for its spinach-like leaves, served cooked.

Chayote - custard marrow - the fruit of a climbing plant, native of Mexico, looks like a large green pear with a spiny surface, it has a firm white bland tasting flesh.

Eggplant/aubergine - fruit - a purple skinned vegetable, pear shaped. The firm yellow flesh is cooked.

Endive/U.S.Chicory - cultivated for its leaves - a curly leaved salad plant.

Fennel - an aromatic flowering plant, a slight flavour of aniseed, the edible part of the plant is the fleshy bulbous stem at the base of the leaf

stalk, it is cooked like celery.

Kale - a winter cabbage. Leaves do not form a head but grow freely. Colours from bluish green to purple. Cooked like cabbage or served raw in a salad.

Kohlrabi - a vegetable whose stem swells above the ground. Prepared as turnip.

Leek - the leek is believed to be a cultivated variety of oriental garlic. It has a large white bulb base with long, green, thick, flat leaves.

Lentil - a leguminous seed which is a good source of protein. Prepared like a dried bean.

Okra - part of the mallou family, the ridged pods are eaten fresh when young or dried and then soaked before use. They are sliced crosswise. The ridged edges give the slices the look of small gear wheels with seeds embedded in the centre. They have a slightly tart taste. It is generally used as a thickener in soups or in a soup called gumbo.

Palm - a member of the lily family and a relative of the onion. When cooked it has a mild flavour. Both the bulb and stems are eaten.

Parsnip - a root vegetable with a distinctive, rather sharp flavour. It is shaped like a carrot and white in colour. It is eaten steamed.

Salsify (oyster plant) - the roots of this carrot shaped vegetable are eaten. It has a mild sweet flavour and is considered to be a good winter vegetable because it may be left in the ground and pulled when needed. It is frequently prepared in any way appropriate for carrots.

Squash - a number of varieties, are cooked and the flesh eaten.

Sweet Peppers - fruit of a vine-like shrub, red or green, raw in salads or cooked.

Sweet Potato - the tuberous root of a trailing vine, about the size of an ordinary potato but unrelated. There are two varieties, yellow and deep orange.

Taro - cooked for its edible starchy flesh, nutty flavour. Its white meat from large tubers called corms is like the potato in food value. It should be cooked and served immediately.

Water Chestnut - a water plant with edible fruit, eaten boiled or roasted, when cooked are crisp but without much flavour.

Yams - similar to sweet potato and prepared in the same way. A climbing plant - the root is eaten.

Unusual Fruits

Blackberry or bramble - a small, edible, dark purple or black berry grown on rough prickly shrubs. They have a tart refreshing taste. Similar to a raspberry but slightly longer.

Boysenberry - a hybrid berry, obtained by crossing the blackberry, raspberry and loganberry, it is large, purple in colour and has fewer seeds than its parents. It tastes somewhat like a raspberry.

Breadfruit - a staple food, in tropical zones it takes the place of starches such as potatoes and cereals. The fruit resembles a green melon ranging up to 8" in diameter and 10 lbs. with a rough warty skin. The pulp is white rather like a grainy bread. The ripe fruit is yellow, it is usually baked as a dessert and is said to taste like a sweet potato.

Clementine - a hybrid citrus fruit, it is a cross between the tangerine and the orange. It is very juicy and is practically seedless. It is in season during the winter months.

Cranberry - this wild berry is cultivated in North America only. It is a deep red and about 1/2" in diameter. It is very tart and slightly bitter and grows on a shrub.

Currant - red or black - the taste is pleasantly sour. They are usually used to prepare preserves, or jelly and the famous liqueur Cassis. Cultivation in North America is discouraged as the shrub serves as host for a fungus which causes pine rust. These are not to be confused with the raisin currant.

Date - a sweet, fleshy fruit of the date palm, is shaped like a long olive and is usually a medium brown in colour. Date palms grow in a tropical belt of hot lands. Iraq is the world's largest exporter of dates. The fruit is sweet and has a pit. They are eaten fresh or dried.

Fig - the fruit of the fig tree. They do best in hot climates and there are many varieties. Figs are eaten fresh where they are grown and preserved elsewhere. They are sweet.

Gooseberry - a fruit that is round, tart and may be red, yellow, green or white depending on the variety. The skin texture may be hairy or smooth; the size may be up to one ounce. The gooseberry is mainly popular in Britain. It is not widely cultivated in North America as it causes blister rust which infects the white pine tree.

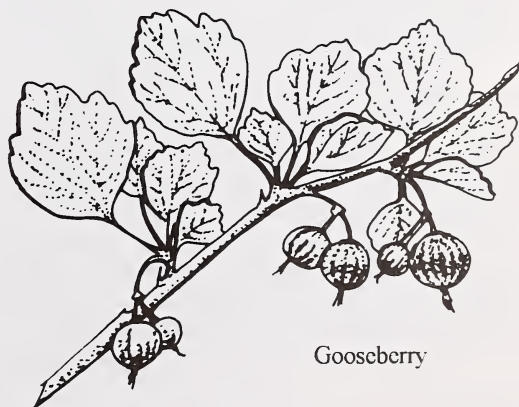
Kiwi (or Chinese gooseberry) - is about the size of a large plum, a fuzzy brown on the outside and a bright green on the inside. It has many tiny black seeds which are eaten. It is eaten raw and peeled and is high in Vitamin C.

Kumquat - this citrus fruit is the size of a small plum. It has an orange gold rind and a bittersweet flavour. Frequently the fruit is eaten whole, rind and all. Kumquats are enjoyed fresh, candied or in marmalade.

Loganberry - this dark purplish red berry has a tartly flavoured pulp that is best preserved. It is used in jams, jellies, pies and ices.

Melons cantaloupe, honeydew, casaba, winter melon - these are members of the cucumber family and are called muskmelons. The cantaloupe is a summer melon which has a beige netted green rind with orange pulp, which is very sweet, and juicy. Casaba and honeydews are winter melons. The casaba is round in shape with a tough ribbed skin. The flesh is creamy white and sweet. The honeydew is oval in shape and has a smooth creamy-white skin with green flesh.

Mango - the mango grows on a huge tropical evergreen tree. It is kidney shaped and can weigh up to eight pounds. The skin is thin and red or yellow in colour. The pulp is fragrant and juicy. Inferior fruit has a strong under taste of turpentine, but this is not a problem with good quality. Fully ripened mangoes are picked green to be used as an ingredient in chutney. When ripe they are eaten as a dessert or used in preserves.



Gooseberry

Papaya - a tropical evergreen plant which is a long slender stalk. The melon-like fruit grows in a cluster near the top. The fruit varies in colour from dark green to yellow to deep orange. The size is that of an oversize pear. It is hollow and contains many smooth black seeds in the centre, surrounded by thick pulpy flesh similar to a soft melon. The flesh is pale yellow to pink. The taste is sweet and usually accompanied by a musky flavour. The juice of the green fruit is rich in an enzyme called papain which is used as a meat tenderizer.

Passion Fruit - this is a purple fruit and grows only in the tropics. The ripe fruit is about the size of a hen's egg. The skin wrinkles upon ripening. The pulp is sweet, juicy and orange with an unusual flavour. Black seeds are imbedded in the pulp and eaten along with the fruit. It is eaten raw as a dessert or a juice. It is too fragile to ship and therefore most of it is eaten where it is grown.

Persimmon - this is an autumn fruit. It is a small fruit - maximum 3" in diameter. In October the fruit turns from green to bright orange and when fully ripe the skin is a bit wrinkled. The fruit is very sweet; it is eaten raw or made into preserves.

Plantain - a variety of banana, it is starchy but not sweet. It is picked unripe and baked, fried or made into fritters. It is never eaten raw. It requires salt, pepper or spice to make it palatable. In the tropics plantain chips are often eaten instead of potato chips.

Pomegranate - this is a red fruit, the size of a large orange. It contains a red juicy pulp that is divided into compartments and encloses many tiny seeds. The pulp has a unique refreshing flavour however it is difficult to eat as the seeds must be separated from the pulp. Often the pulp is put through a sieve to make cool summer drinks or employed in the manufacture of grenadine syrup.

Prickly Pear - this is a berry-like fruit of a cactus plant. The pears are oval, with thick yellow skin and are about 4" x 3" in size. The pulp is generally bright red, sweet, juicy with a mealy consistency. To eat the pear the skin must be slit lengthwise and peeled away from the pulp.

Prune - a dried plum. The prune plum may be dried naturally in the sun or in an oven. Prunes have a pit in the centre. They are eaten raw or stewed and are well known for their laxative properties.

Quince - a sour fruit grown on a shrub which is native to Iran. The fruit is golden yellow, is covered with fine resistant hair and resembles a pear. It is often added to jam.

Tamarind - the seed pod of a tree native to India. The pods are brown with a thin shell-like skin containing a number of seeds embedded in an aromatic, sweet-acrid pulp. The pulp is white and crisp. The pulp and seeds may be boiled with syrup and solidified or the pulp may be reduced to a jellylike paste. It is used in chutneys and curries, is used to make sweet preserves and is one flavouring ingredient in Worcestershire sauce.

Tamarillo - (tree tomato) orange-red sometimes violet fruit of a small tree. The fruit is egg shaped up to 1 1/4" in diameter. It is eaten raw, cut in half, sprinkled with sugar or stewed. It is rich in pectin.

Tangelo - this hybrid fruit is a cross between the grapefruit and the tangerine. It generally has an orange-green skin and is about the size of an orange. The flavour is sweet-tart and blends the sweetness and bitterness of the parents in a distinctive flavour. Tangelos are often on the market in November, December and January.

Wild Fruits

Nutritionally, wild fruits are as rich in vitamins and minerals as cultivated fruits and are usually lower in sugar and calorie content. It is best to stay away from any berry or fruit in the wild unless you recognize it and are sure that it is edible.

Common Wild Sunflower - The wild sunflower is similar to the garden sunflower except that it is smaller. The seeds are smaller and there may be less of them than on a cultivated plant otherwise the two plants are the same. To collect the seeds, shake the flowering heads into a bowl. The seeds may be eaten fresh or roasted. The seeds are rich in protein, oil and Vitamin D.

High-Bush Cranberry - This fruit grows on a tree that reaches a height of four feet, the leaves are sharply and deeply three lobed. The berries are large and red in drooping terminal clusters. When the fruit first matures they are hard, crisp and sour, but after a heavy frost they become soft although still tart. They are best cooked in a sauce or jelly.



Soapberry and Buffaloberry - These are upright deciduous shrubs with smooth edge leaves. Soapberry grows up to four feet. The oval shaped leaves are green on top with a coppery scurf on the underside. The flowers are small yellowish green and the fruits are bright red-orange and juicy but extremely bitter. Buffaloberry grows up to six feet and has silvery leaves. The flowers are brownish, the berries brilliant red, fleshy and bitter. The berries are used to make "Indian" ice cream and jelly or a lemonade-like drink.



Crowberry - The deep shiny black berries grow on low woody evergreen creeping plants. The flowers are tiny and reddish; they grow towards the ends of the twigs. The fruits are seedy but juicy. They are a good emergency food source in the North. They ripen in late summer. The berries can be eaten raw, or cooked. Inuit and northern Indians usually dried or froze the berries for winter use.

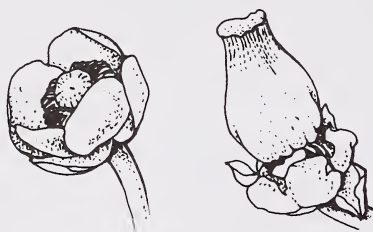
Low-Bush Cranberry - This little shrub grows in muskegs and is common in northern forests. The plant is a low creeping dwarf shrub with oval shaped evergreen leaves. The flowers are pinkish in compact terminal clusters. The berries are small, bright red and acid; they ripen in autumn and often remain on the plants over the winter. They are fairly rich in Vitamin C. The taste may be improved by adding sugar or mixing them with other fruits. The berries keep well and may be used in jams, jellies, sauces, plus, tarts and cakes.

Wild Blueberries/Huckleberries - The berries grow on bushes that are generally very low; up to 2 meters in height. Blueberry bushes are low with velvety smooth-edged leaves and clustered, light-blue, tart berries. The berries are delicious raw, in baked products, in jams, jellies and syrups. Blueberries freeze well and may be canned or dried.

Wild Currants - These grow in general on low slender shrubs. The leaves are maple-like and the flowers which are usually found in dense, drooping clusters vary from greenish brown to bright red. Of the many varieties some are more highly recommended than others. The wild northern red currant and various black fruited varieties are better than those with bluish fruits. They are rich in Vitamin C and make excellent jams, jellies, syrups, wines and preserves.

Wild Gooseberries - Gooseberries grow on shrubs one-two meters tall. The branches are spiny. The many seeded berries are variable in size and may be hairy, smooth or bristly. The berries may be reddish, purplish or black; all are juicy with translucent skins and quite tasty when ripe. The berries can be recognized by the brownish wick at the end of each. The berries grow singly. The fruit may be used in jams, jellies or other baked goods.

Yellow Pond Lily - This fruit grows along the edges of lakes and ponds, with its leaves floating along the surface attached by long cord like stems to the fleshy rhizomes buried in the mud at the bottom.



The flowers are bright yellow. As the fruit matures, the petals rot away leaving large fleshy green capsules filled with seeds. The seeds are nutritious and of good flavour. When the seeds are immature the outer skin is fairly soft and easy to remove. When the seeds are fully ripe the outer shell is hard and thick and they should be soaked in hot water to loosen the kernel. They can then be crushed. In either case the seeds can be eaten as is or ground. The immature seeds can be prepared as the Indians did by parching them in a hot frying pan until they swell and pop open slightly, somewhat like popcorn.

Saskatoon Berries - Saskatoons are deciduous and may be low straggly shrubs to small bushy trees 5 meters tall. The bark is greyish to red and smooth with oval leaves. The flowers are five petalled and showy in clusters depending on the species; they bloom in May-June. The fruits contain five to ten whitish seeds. The berries are fleshy and dark blue in colour with sweet juicy pulp. Fresh Saskatoon berries are delicious in pancakes, muffins, pies, jams or jellies. They may be canned or frozen or dried. The berry is high in iron.

Wild Strawberries - Wild strawberries are usually found in clearings. The strawberries are leafy perennials, they reproduce from long runners. The flowers are white, five petalled and the leaves bright

green. The berries resemble cultivated strawberries only smaller. These delicious berries are ripe in late June and best when eaten fresh.

Pin Cherry - The pin cherry is a tall tree or shrub. The leaves are thin and lance shaped. White petalled flowers appear in spring. The cherries are small, bright red with tart flesh and rather large stones. They ripen in late summer. Pin cherries grow in loose clusters of five to seven with each fruit on a long slender stalk. Pin cherries may be found in wooded areas and along river banks. Jellies, juice, and wine are excellent preparation choices because the pits are removed during preparation. The pits, wilted leaves and bark of the pin cherry are poisonous.

Choke Cherry - This is a tall shrub up to eight meters in height. The leaves are broad oval with pointed tips. The flowers are small creamy in clusters appearing after the leaves are almost fully developed. They have a strong unpleasant odour. The cherries grow in large clusters and are pea sized and fleshy with large stones. The colour ranges from bright translucent red to deep reddish purple. The fruits are sweet when ripe but astringent and "choky" when unripe. Because of the large pits choke cherries are mainly used in juice, jelly and syrup. If fruits are eaten before they are completely ripe they may leave a "cottony" taste in the mouth. The pits, leaves and bark of the choke cherry are poisonous.

Wild Roses - Wild roses are multi-stemmed shrubs with thorns. The leaves consist of 5 - 9 leaflets. The flowers are a pink 5 petalled type, they have a delicate scent. Rose fruits known as "hips" are spherical or elongated when ripe and orange to deep red. They consist of a edible fleshy outer rind surrounding a mass of tightly packed whitish seeds which are covered with many minute sliver-like hairs. Rose hips are best for eating when picked fully mature. The seeds must be removed as the hairs might catch in the throat and cause irritation. Caution should also be taken when removing the seeds with bare hands as the bristles can irritate the skin and cause dermatitis. The seeds contain high concentrations of Vitamin E. Once the hairs are removed the seeds can be ground and used in baking or cooking. Once the seeds are removed the rose hips can be used in salads, or desserts.

Rose hips may also be used for jelly, syrup and tea. Rose hips are a good source of Vitamin C. The prickly rose is the floral emblem of Alberta.

Wild Raspberry - The wild raspberry closely resembles the garden variety. The leaves are smaller and rounder than the cultivated ones. When ripe the berries easily separate from the white central receptacle. Wild raspberries can be found in wooded areas. They can be used for jams, jellies, preserves, ice cream sauce. They may be eaten fresh or frozen.

References:

Edible Wild Fruits and Nuts of Canada.
Nancy Turner and Adam Szczawinski. National
Museum of Natural Sciences.

Wild Rose



Wild Raspberry



Edible Plants (Other Than Fruits)

Arrowhead - The arrowhead grows in shallow water in ponds. It grows from a few inches to three feet tall. The arrow shaped leaves grow in clusters of three. The root stalk is an edible tuber. They can be boiled or roasted.

Cattail - The Cattail grows in swampy areas and borders of streams and ponds. The plants have tall slender leaves extending from the base. Sausage-like brown heads extend from the base also on slim but strong stems. Many parts of the plants are edible. The roots and lower portions of the stems are sweetish. They should be scrubbed, peeled and eaten raw or baked. They are high in carbohydrates. The young shoots taste somewhat like cucumbers and make tasty pickles. The flower spikes can be gathered and husked as for corn and boiled.

Chickweed - This vigorous weed consists of many branching stems which serve as good ground cover. The leaves are smooth, oval, sharply pointed and bright green. It has tiny white flowers that resemble stars. The plant grows under many conditions and is very common. When young it may be used in salads or cooked very slightly.

Dandelion - This large yellow flowered plant grows abundantly in every inhabited corner of Canada. The yellow blossoms grow on a hollow stalk. Directly beneath the flower head is a cup of long green leaves. The leaves of the plant grow from the root. They resemble large teeth and have a pointed tip. Once the blossoms wither the disks that bear them resemble white fuzz. The young raw leaves are popular as salad greens or boiled. The scrubbed, sliced and boiled in salted water and are quite sweet. These roots may be roasted until nut brown, grated and used as a coffee stretcher, the dandelion being a close cousin of chicory.

Fireweed - The flowers of the fireweed are borne on tall spikes, in shades of pink through purple. The lower part of the spike may be covered with long seed pods. Lancehead-shaped green leaves grow at the bottom of the stems. Fireweed grows anywhere that has recently been cleared or levelled by fire. The young fireweed stems may be sectioned, boiled and cooked until easily pierced by a fork; they resemble asparagus. The tender young leaves may be steamed or boiled. Green or dried, the leaves may be used as tea.

Lamb's Quarter/Pigweed - is a wild spinach, a branching annual which grows from one to

six feet high. The leaves are greyish-green or bluish-green and the undersides appear floury-white and mealy. The leaves are long and diamond shaped. Tiny green round flowers grow at the top of the stalk. The entire young plant is edible and high in calcium; it has a very mild flavour.

Marsh Cress - Marsh cress grows upright in wet or marshy places. The plant grows floating, rooting at the nodes. The leaves have from three to nine segments; the flowers are small and yellow. The leaves and shoots are used for salad plants. It is a good substitute for the cultivated water cress.

Redroot Pigweed - The leaves grow on a single stalk; they are fuzzy dull green in the shape of long-pointed ovals with wavy edges. The roots are red. The flowers grow along the stalk, are green, pointed and grow in clusters. The young plants are mild and tender and may be eaten raw or boiled. Shiny black seeds develop and these may be rubbed free of their husks, cleaned and ground and added to white flour.

Plantain - is a short stemless perennial which has strongly ribbed, spade-like green leaves which grow directly from the root with one or more straight central spikes. These spikes bear tiny greenish blossoms which mature into seeds. Plantain is eaten raw when young and later cooked like spinach. It is high in Vitamins A and C. The leaves may also be used for tea.

Prickly Lettuce - The leaves, which are divided into several lobes, have sharply pointed teeth. The under portion of each leaf has short stiff spines. The light yellow flowers group together several to a head. When gathered, young prickly lettuce is good in salads. As a cooked green the larger leaves lose their prickly characteristics.

Red Clover - is identified by the tiny flowers that collectively form the dense clover blossom. These are a low-growing perennial. They have three leaflets; the centre one extends from a slim stalk. Clover grows in open areas. The blossoms are used to flavour cheese, or eaten raw. Mature blossoms may be dried and made into tea.

Salsify - The salsify has a single-headed yellow or purple blossom that has long pointed bracts which extend outward from under the petals. The plant flowers during June and July. The leaves, which grow along the lower part of the stalk, are

thin and grasslike. The plants grow from one to four feet high. The young salsify roots may be scrubbed, boiled and eaten. It is said that they taste like parsnips.

Shepherd's Purse - The flowers grow close together on stalks close to the tip of the stem. They are white with a yellow stamen and very small. The leaves, which grow in a rosette at the base of the stem are dandelion-like. This plant belongs to the mustard family. The young leaves are enjoyed in salads. The plant is found on the roadsides.

Sow Thistle - The flowers of the sow thistle resemble the flowers of the dandelion. The leaves are sharply spiky on a hairy stalk. These grow abundantly in any moist clear space. They make a good salad plant when young.

Wild Lettuce - The wild lettuce is very similar to the prickly lettuce minus the spikes on the leaves. Small tender plants are excellent raw. The greens may also be cooked.

Credits

The original manual was written in 1987 by Brandywine Enterprises Ltd. and designed by Studio 3 Graphics Ltd. The concept and text were prepared by Andrea Spalding, with research and educational input from Dreana Pascoc, and research and editing by David Spalding. Considerable assistance was provided by the staff of Alberta Agriculture and volunteers who allowed us to include them in the 'profiles' section.

These materials were developed under the leadership of a special committee of Alberta Agriculture's Home Economics Branch:

Faye Douglas Phillips - Regional Home Economist

Linda St. Onge - Food and Nutrition Specialist

Aileen Whitmore - Provincial Food and Nutrition Specialist and Chairman

Updated Edition

This revised 1995 edition was prepared by Laurette Phimester and Linda St. Onge.

Useful Addresses

The following addresses are useful sources of publications and other materials. Many produced by

other sources are also available from Alberta Agriculture.

ACCESS NETWORK, Media Resource Centre, 3720 - 76 Avenue, Edmonton, Alberta, T6B 2N9, Phone: 440-7777.

Alberta Agriculture, 7000-113 St., Edmonton, Alberta, T6H 5T6, Phone: 427-2412.

Alberta Culture. Cultural Heritage, 12431 Stony Plain Rd., Edmonton, Alberta, T5N 3N3.

Indian & Northern Affairs Canada, Alberta Regional Office, 6th Floor, 9700 Jasper Avenue, Edmonton, Alberta, T5J 4G2, Phone: 495-2773. (some publications available).

Dairy Nutrition Council of Alberta, 14904 - 121 A Avenue, Edmonton, Alberta T5V 1A3, Phone: 453-5942, Fax: 455-2196, Toll Free: 1-800-252-7530.

National Film Board of Canada, North West Centre, Rm 120, 9700 Jasper Avenue, Edmonton, Alberta, T5J 4C3, Phone: 495-3010

BAR GRAPHS CLASSIFICATION

MILK PRODUCTS

Cheddar Cheese
Milk -- skim, 1%, 2%, whole,
chocolate, partly skimmed
Yogurt
Chocolate Milkshake
Cream of Mushroom Soup

MEAT AND ALTERNATIVES

Roast Beef
Roast Pork
Chicken
Fish
Beef Liver
Bacon
Baked Beans
Peanuts
Peanut Butter
Egg
Wiener

VEGETABLES AND FRUITS

Apple
Squash
Orange Juice
Carrot
Baked Potato
Broccoli
Tossed Green Salad
Grapefruit
Banana
French Fried Potatoes

GRAIN PRODUCTS

Granola
Bran Muffin
Spaghetti
Cornflakes
Rice -- converted, unenriched
Bread -- whole wheat, white enriched
Brown Rice
Hot Dog Bun

COMBINATION FOODS

Hamburger
Macaroni and Cheese
Pizza

OTHER FOODS

Potato Chips
Butter
Orange Flavoured Drink
Gum Drops
Salad Dressing, French
Chocolate Chip Cookies
Cola
Honey
Ice Cream
Danish Pastry
Margarine
Sugar
Cream Cheese
Popcorn
Chocolate Bar

UNDERSTANDING THE BAR GRAPHS

The bar graphs indicate the nutrient contribution of various foods to the recommended daily nutrient intake of a female adolescent requiring approximately 2200 calories. We used this age group because the data is available, and because this group tends to have poor eating habits.

The bars on the horizontal axis represent some of the major nutrients in food.

The vertical axis indicates how much, expressed as a percentage, one serving of a food contributes to the daily recommended intake for each nutrient shown.* For example, one eight ounce (227 mL) glass of 2% milk will give a female adolescent 21% of her total daily protein needs.

The bar graphs only indicate the nutrient contribution of a food up to 33%. If a food contributes more than 33% of the recommended intake for any nutrient, the percentage contribution is written on the upper part of the broken bar. For example, the calcium contribution of an eight ounce glass of 2% milk is 37%, which is indicated numerically on the calcium bar.

* Although daily requirements for carbohydrate and fat have not been firmly established, both nutrients are known to be essential for health and well being. Information to date suggests that approximately 55% of the daily caloric intake should be from carbohydrate, 30% from fat and the remaining 15% provided by protein.

INTERPRETATION OF THE BAR GRAPHS

The bar graphs must be interpreted carefully. You might judge a food nutritious if all the coloured bars indicate a good percentage nutrient contribution. However, caution is advised for several reasons. Firstly, in North America where 50% of the population is overweight, the nutritional quality of a food should be evaluated by the nutrients provided for each calorie consumed. When choosing your diet, attempt to obtain the maximum nutrition per calorie.

Secondly, foods high in saturated fat (mostly from animal sources) are now being linked with heart disease and should be consumed in moderation regardless of the other nutrients provided. Lastly, remember that the nutrient contribution of the bar graph foods is related to the specialized nutrient needs of a specific age and sex, a 13-15 year old female. However, because adolescence is a period in the life cycle in which nutrient needs are greatest, the foods which are nutritionally significant to a 13-15 year old female will also be significant to other age groups.

When studying the bar graphs it is important to realize that these graphs only represent ten leader or key nutrients and not the total number of nutrients identified to date (about 50). In addition to the few leader or key nutrients, each food group is also an important source of many other nutrients, present in smaller amounts, but nevertheless very important for health and well being.

MILK GROUP

The leader nutrients include protein, calcium, vitamin A and riboflavin. The primary difference among skim, 1%, 2%, and whole milk is the amount of fat and calories.

Why is riboflavin a leader nutrient of the Milk Products Group?

Although the Milk Products Group is a good source of the B vitamin complex, riboflavin is isolated as a leader nutrient because it is not readily found in other food groups. However, the other B vitamins can be easily obtained in 2 other food groups, the Meat and Alternatives Group and the Grain Products Group.

Why does 2% milk have more vitamin A?

Vitamin A is a fat soluble vitamin which is found in the butterfat of milk. When the fat is skimmed from milk, the vitamin A is also removed. Although vitamin A is added back to skim, 1%, and 2% milk, all milks receive equal amounts of the vitamin. Subsequently the amount of vitamin A added to 2% milk complements the vitamin A naturally in the 2% butterfat to provide more vitamin A than is found in either skim or whole milk.

Isn't cheese in the Meat and Alternatives Group?

Cheese is correctly placed in the Milk Products Group because it contributes the four leader nutrients characteristic of the Milk Products Group. Although cheese often replaces meat as a protein source, it lacks the iron and thiamin necessary to qualify it for the Meat and Alternatives Group.

Why are some of the leader nutrients lower in cheese than in milk?

When cheese is made, a percentage of all nutrients remain in the whey which is drained from the curd. However, the nutrients most significantly affected in the cheese making process are those that dissolve in water, the major component of whey (Vitamins B and C). Consequently, cheese differs from milk most significantly in the contribution of B vitamins, a large percentage of which is drained with the whey.

MEAT AND ALTERNATIVES GROUP

There are many foods belonging to the Meat and Alternatives Group which may surprise you. The Meat and Alternatives Group provides the leader nutrients: protein, iron and B vitamins.

Why are baked beans, peanuts, and peanut butter in the Meat Group?

These foods may be vegetable in origin but because they contribute the leader nutrients of the Meat and Alternatives Group they are considered meat alternatives. Baked Beans may confuse you at first because they also contribute carbohydrate and calcium (from the bean) which are uncharacteristic of the Meat and Alternatives Group. The vitamin C found in baked beans comes from the tomato Sauce.

Why are eggs in the Meat and Alternatives Group?

The egg bar graph is confusing because of the vitamin A value. With the exception of the vitamin A, the egg closely follows the nutrient pattern of the meat and so is classified into the Meat and Alternatives Group.

To which group does liver belong?

At first glance, it is difficult to decide to which food group liver belongs! Liver is one of the exceptions of the Meat and Alternatives Group. It is not only a very good source of the leader nutrients, protein, iron and B vitamins, it is an excellent contributor of vitamins A and C. Liver is high in vitamin A value because most animals store this vitamin in their livers. Because vitamin C concentrates in some of the active tissues (liver, kidney, brain, pancreas) of most

animals, some meats, including liver, kidney and sweet breads contribute vitamin C.

Is bacon really in the Meat and Alternatives Group?

Lean bacon because of its nutrient contribution is in the Meat and Alternatives Group. However, bacon is higher in fat and calories than most meat products and it is an expensive way (in cost and in calories) to meet your daily needs from the Meat Group.

VEGETABLES AND FRUIT GROUP

The vegetables and fruits are noted for contributing vitamins A and/or C. Although vitamins A and/or C are isolated as the leader nutrients, remember that vegetables and fruits are excellent sources of many other nutrients which must be present before a food can qualify for this food group.

Can cooking destroy the vitamins and minerals found in the Vegetables and Fruit Group?

Some nutrients can be lost by poor cooking methods. Although vitamin A is a fairly stable vitamin that isn't destroyed under normal conditions of food preparation, vitamin C is easily destroyed by poor storage and cooking. Vitamin C dissolves in water and is destroyed easily by heat and exposure to air. For example, the vitamin C in broccoli will be lost if the broccoli is chopped into small pieces, and cooked in excessive amounts of water until it is limp. To preserve the nutrients in fruits and vegetables remember the general rules: short storage, shortest possible cooking time and least amount of cooking water.

Why isn't iron a leader nutrient of the Vegetables and Fruit Group?

Some vegetables and fruits (e.g. tossed green salad) contribute some iron. However, the iron in vegetables and fruits, for reasons yet unknown isn't used very efficiently by the body. Iron from the Grain Products Group and particularly, the Meat and Alternatives Group is used much more efficiently and so these foods are considered more reliable contributors of iron to the diet.

Can we meet our calcium requirements from the Vegetables and Fruit Group?

Although a few vegetables supply calcium (e.g. broccoli, salad), this food group is not a significant contributor of this nutrient. The easiest and most efficient way to meet your calcium need is to choose foods from the Milk Products Group.

Are french fried potatoes really more nutritious than baked potatoes?

No. The 100 grams of baked potato consists of skin (mostly fibre or roughage), potato matter which contains the nutrients, and a large percentage of water. The 100 grams of french fried potato are really a concentrated form of potato consisting mostly of potato matter, with no skin and very little water to add to the weight. Because there is more potato matter in 100 grams of french fries than there is in 100 grams baked potato there will naturally be a proportional amount of nutrients. However, by taking into account the high fat contribution and by calculating the nutrient value per calorie, you will discover that french fried potatoes are a poor source of nutrients.

GRAIN PRODUCTS GROUP

Why isn't protein a leader nutrient of the Grain Products Group?

Proteins are made up of amino acids which are like tiny building blocks that can be arranged in different ways to form different proteins. Of the twenty amino acids that can be combined in the body to make proteins, only nine are not made in the body. These nine amino acids are called the essential amino acids and they must be obtained from the diet. Proteins that contain all nine essential amino acids in amounts needed by the body are referred to as high nutritional value proteins. Foods, from animal sources such as milk, cheese, eggs, meat, poultry and fish contribute high nutritional value proteins.

Low nutritional value proteins usually have one or more of the essential amino acids in short supply. Proteins of low nutritional value are obtained from the plant products, bread, pasta, cereals, beans and nuts.

This does not mean that plant proteins aren't useful to the body. They can be as useful as animal proteins if care is taken to combine several plant proteins or to supplement a plant protein with some animal protein in a way that ensures that the nine essential amino acids are available, in amounts useful to the body.

Because the protein supplied by grain products is lower in nutritional value than protein supplied by milk and meat products, the Grain Products Group is most significant for its contributions of the leader nutrients, carbohydrate, iron and B-vitamins.

Is white bread as nutritious as whole wheat bread?

The answer is "no"!

Although white bread in Canada is made from

enriched flour, whole wheat or whole grain bread is a better all round food. Because enriched flour has the leader or key nutrients, thiamin, niacin, riboflavin and iron added to it, foods made from enriched flour are correctly classified into the Grain Products Group. However, many more vitamins and minerals are lost in the refining process than are restored to enriched flour. Whole grain breads and cereals contribute other B vitamins (pyridoxine, pantothenate, folate), vitamin E and trace minerals (zinc, copper, manganese) that have been removed from white bread and other products made from refined white flour. (See spaghetti, cornflakes graph).

In addition, whole grain breads and cereals are excellent sources of fibre or roughage, a substance now thought to be lacking in highly refined diets. Although granola is a whole grain cereal, its high sugar, fat, and consequently its high caloric content make it a poor choice for those who must limit their fat and caloric intake.

Which type of rice is most nutritious?

Brown rice is your best nutritional choice. White or polished unenriched rice has lost many of the vitamins and minerals when the brown coat and germ are removed. However, if white rice is preferred use "converted" or "parboiled" because it offers the best substitute for brown rice. "Parboiled" rice has been steamed under pressure. The pressure forces many of the vitamins and minerals from the coat and germ into the kernel before the brown coat is removed.

COMBINATION FOODS

The bar graphs include three combination foods: hamburger, macaroni and cheese, cheese and salami pizza.

Combination foods are dishes comprised of foods from more than one food group.

The hamburger and hot dog combine the nutrients of the Meat and Alternatives Group and the Grain Products Group. Because iron and the B vitamins are leader nutrients of both the Meat and Alternatives and Grain Products Group, this combination is additive with respect to these nutrients. Also, the high quality protein of the Meat and Alternative Group complements the poorer quality protein from the Grain Products Group. Notice that these two foods are high in fat and calories and should be included in the diet only occasionally.

Macaroni and Cheese combines the goodness of the Milk Products Group and the Grain Products Group. Once again, this product is high in fat and calories and should be eaten in moderation.

Cheese and Salami Pizza offers a little goodness from each food group. It can make an excellent snack or

form the basis of an occasional meal but once again - watch the large contribution of fat and calories.

THE "OTHER FOODS"

The "other foods" group includes foods which contribute nothing or very little to the diet except calories and/or fat and/or carbohydrate.

Why are potato chips classified as an "other food"?

Notice the caloric and extremely high fat contribution of 20 potato chips. When the nutrient value is compared to the calories consumed, the nutrient contribution of the potato chips is almost negligible.

Shouldn't orange flavoured drinks be in the Vegetables and Fruit Group because of the vitamin C?

No! Although orange drink contributes plenty of vitamin C it offers very little else. Remember that fruits and vegetables contribute to a variety of other nutrients in addition to the vitamin A and/or C. Orange drink is lacking the significant amounts of potassium, iron and thiamin found in orange juice.

Doesn't butter belong in the Milk Products Group?

Although butter is a milk product it does not belong in the Milk Products Group. To qualify for the Milk Products Group a food must contribute significant amounts of protein, calcium, vitamin A and riboflavin. Butter is made from the butterfat of milk. All of the nutrients, except vitamin A which remains in the butterfat are left in the fluid milk. Butter is high in fat and calories and should be used sparingly.

Isn't honey good for you?

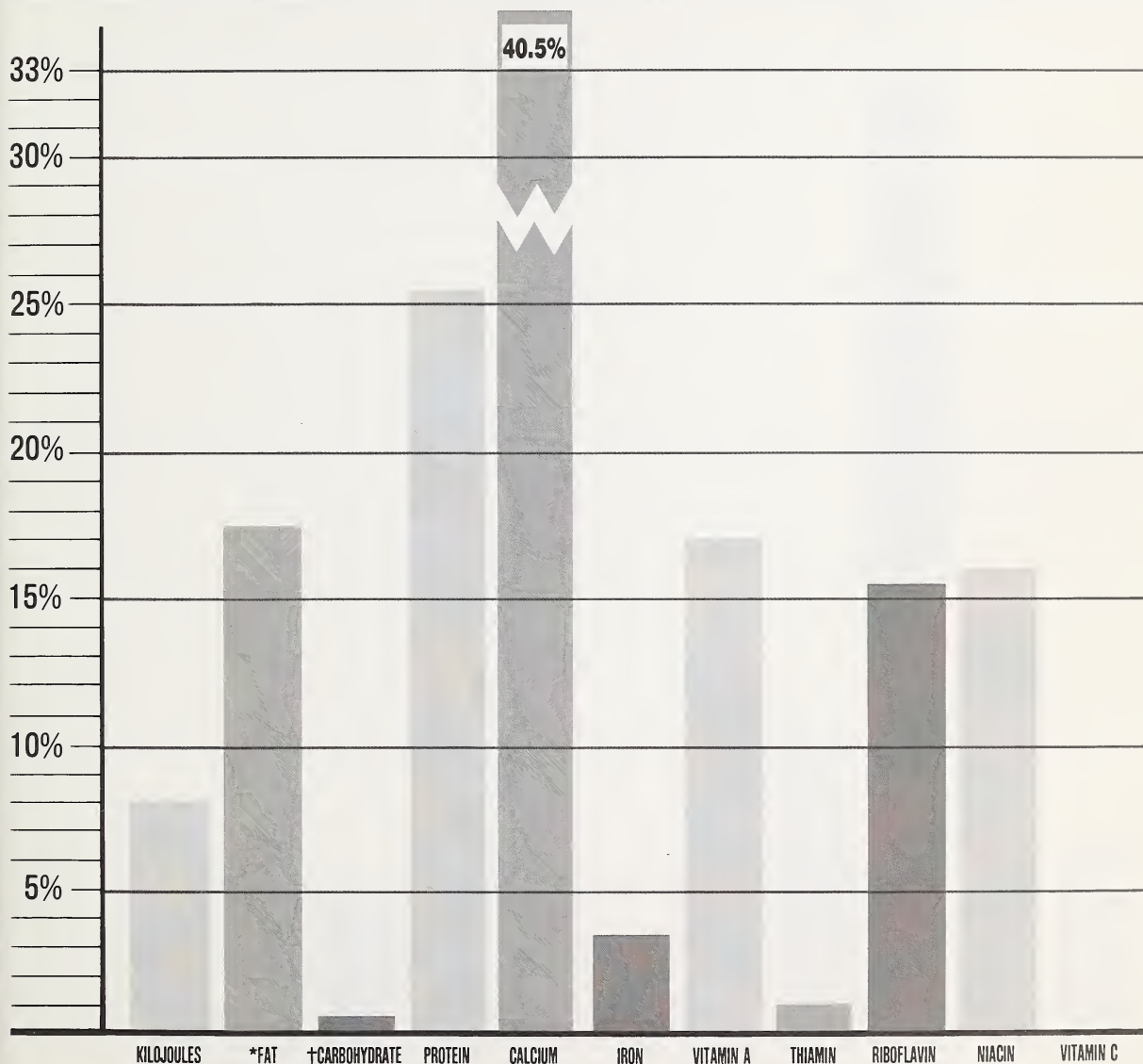
No! Contrary to popular belief, honey whether pasteurized, unpasteurized, or so called "organic" is no better for you than white sugar. The traces of some nutrients may be significant to the bee but are of insignificant value to man. Honey can be substituted for sugar if you prefer the flavour, but don't feel that you are doing yourself a favour by switching from white sugar to honey.

*Adapted from the Ontario Milk Marketing Board
1989*

Revised 1995

CHEDDAR CHEESE

45 g (1 1/2 oz)
760 kJ (180 cal)



*Calculation of fat based on 35% of required kilojoules

†Calculation of carbohydrate based on 50% of required kilojoules

CONTRIBUTION TO RECOMMENDED INTAKE...TEENAGER

(AGE 13-15 FEMALE)

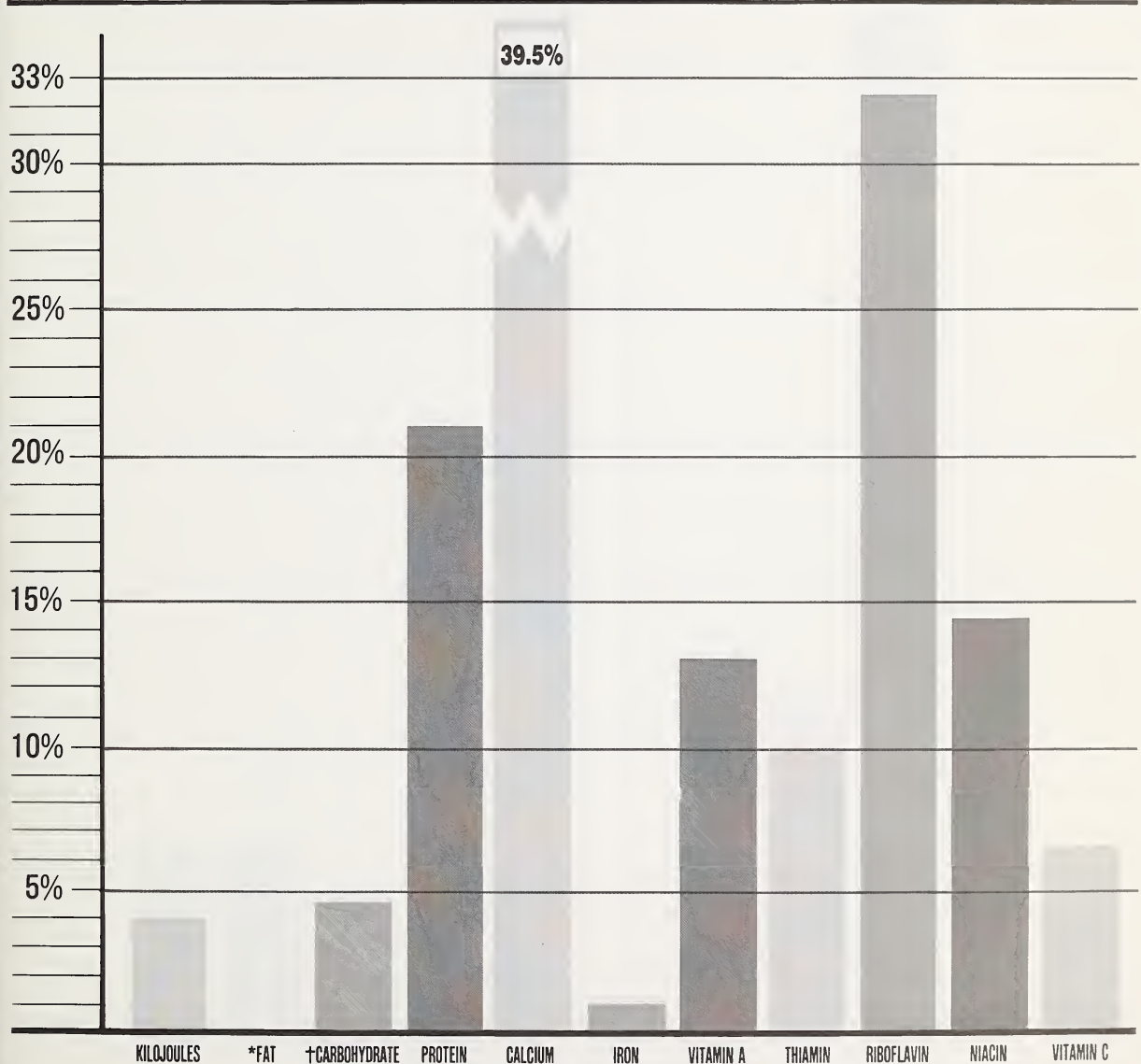
Dietary Standard for Canada (1982)
Standards alimentaires Canadiens (1982)

Alberta
AGRICULTURE

Adapted from Ontario Milk Marketing Board (1983)

SKIM MILK

250 mL (8 oz) volume
380 kJ (90 Cal)



CONTRIBUTION TO RECOMMENDED INTAKE...TEENAGER

(AGE 13-15 FEMALE)

*Calculation of fat based on
35% of required kilojoules

†Calculation of carbohydrate based
on 50% of required kilojoules

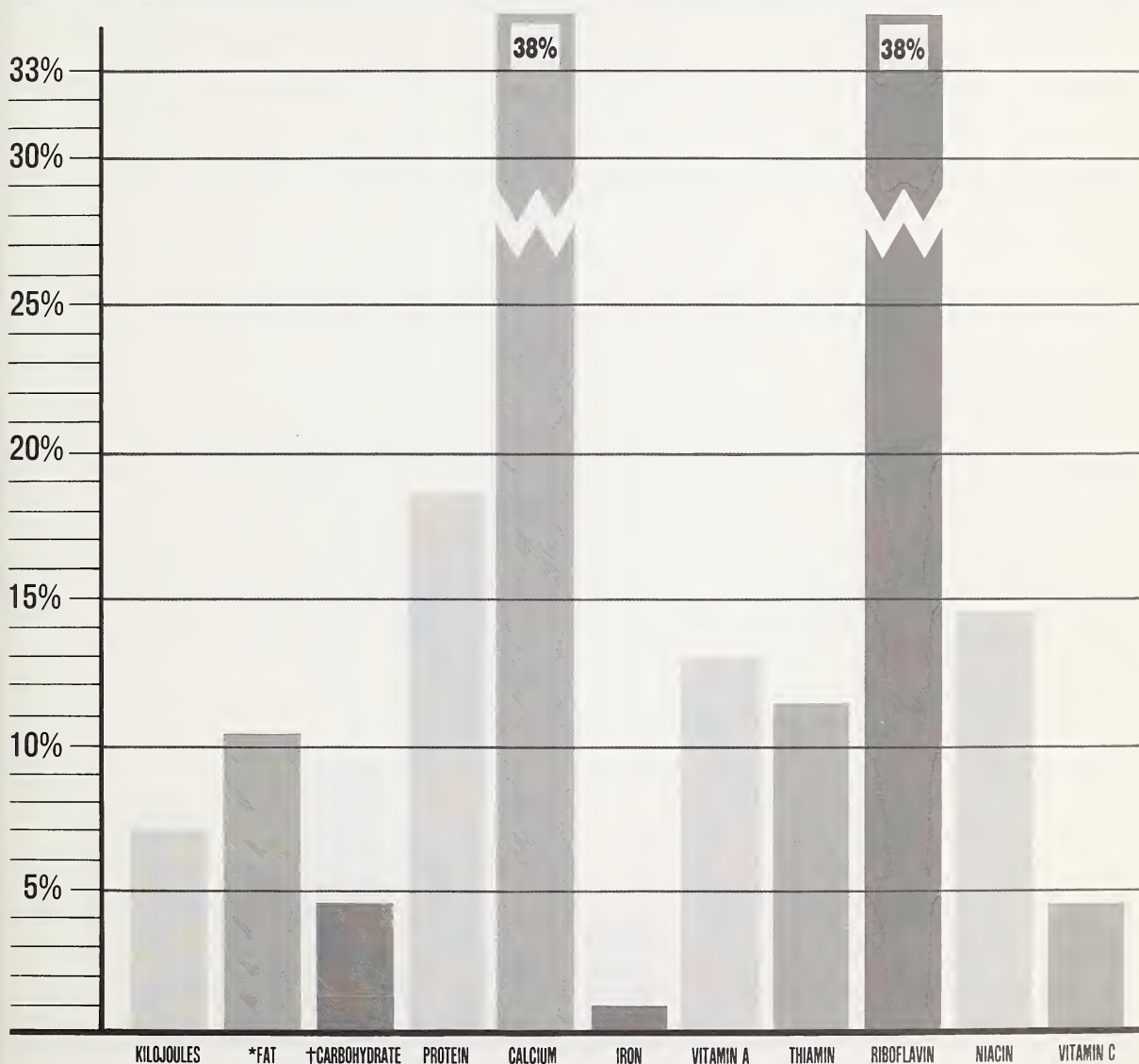
Dietary Standard
for Canada (1982)
Standards alimentaires
Canadiens (1982)

Alberta
AGRICULTURE

Adapted from
Ontario Milk Marketing
Board (1983)

WHOLE MILK

(3.3% fat)
250 mL (8 oz) volume
660 kJ (157 Cal)



*Calculation of fat based on 35% of required kilojoules
†Calculation of carbohydrate based on 50% of required kilojoules

CONTRIBUTION TO RECOMMENDED INTAKE...TEENAGER
(AGE 13-15 FEMALE)

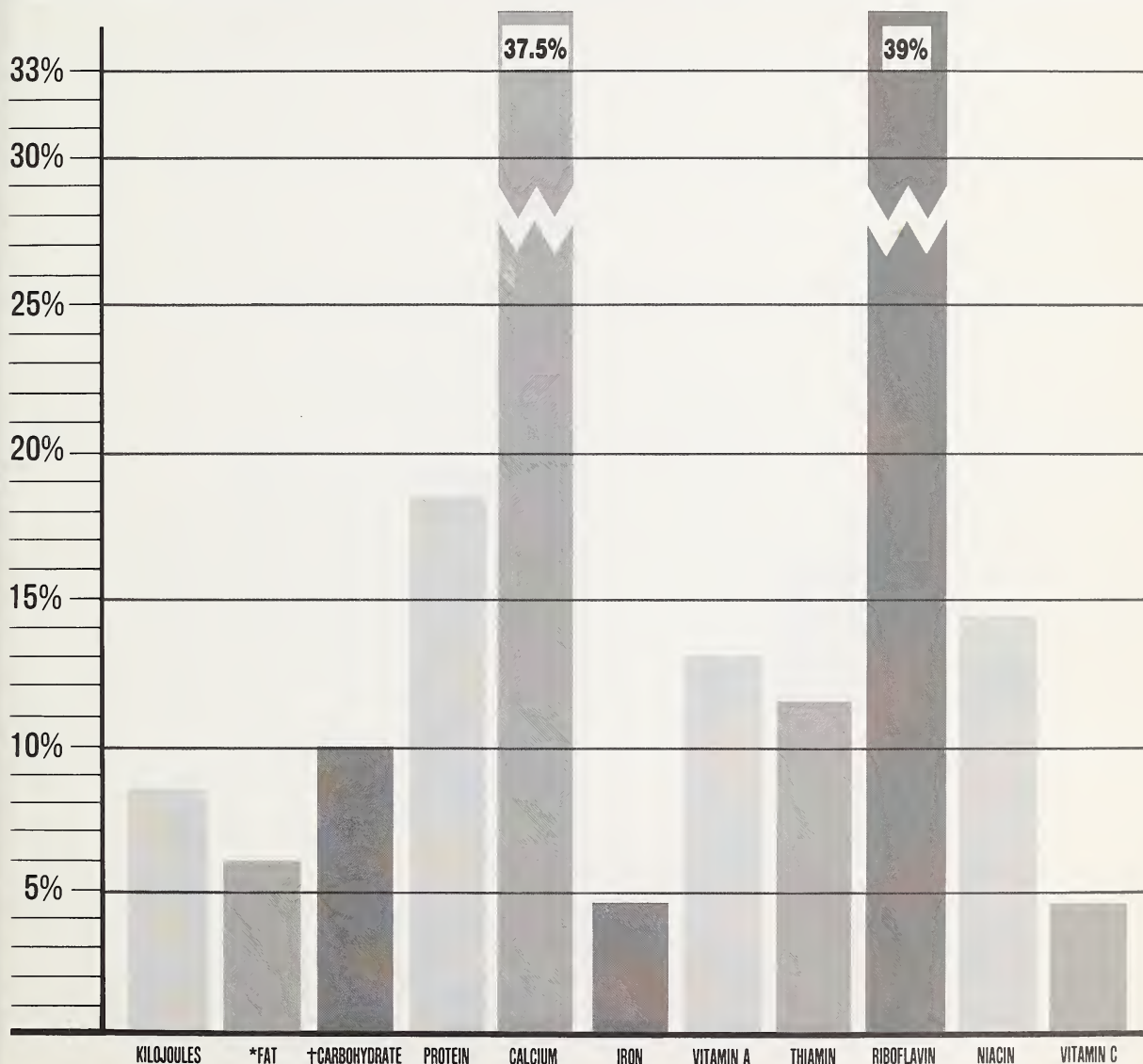
Dietary Standard
for Canada (1982)
Standards alimentaires
Canadiens (1982)

Alberta
AGRICULTURE

Adapted from
Ontario Milk Marketing
Board (1983)

CHOCOLATE MILK

partly skimmed
250 mL (8 oz) volume
800 kJ (190 Cal)



*Calculation of fat based on
35% of required kilojoules
†Calculation of carbohydrate based
on 50% of required kilojoules

CONTRIBUTION TO RECOMMENDED INTAKE...TEENAGER

(AGE 13-15 FEMALE)

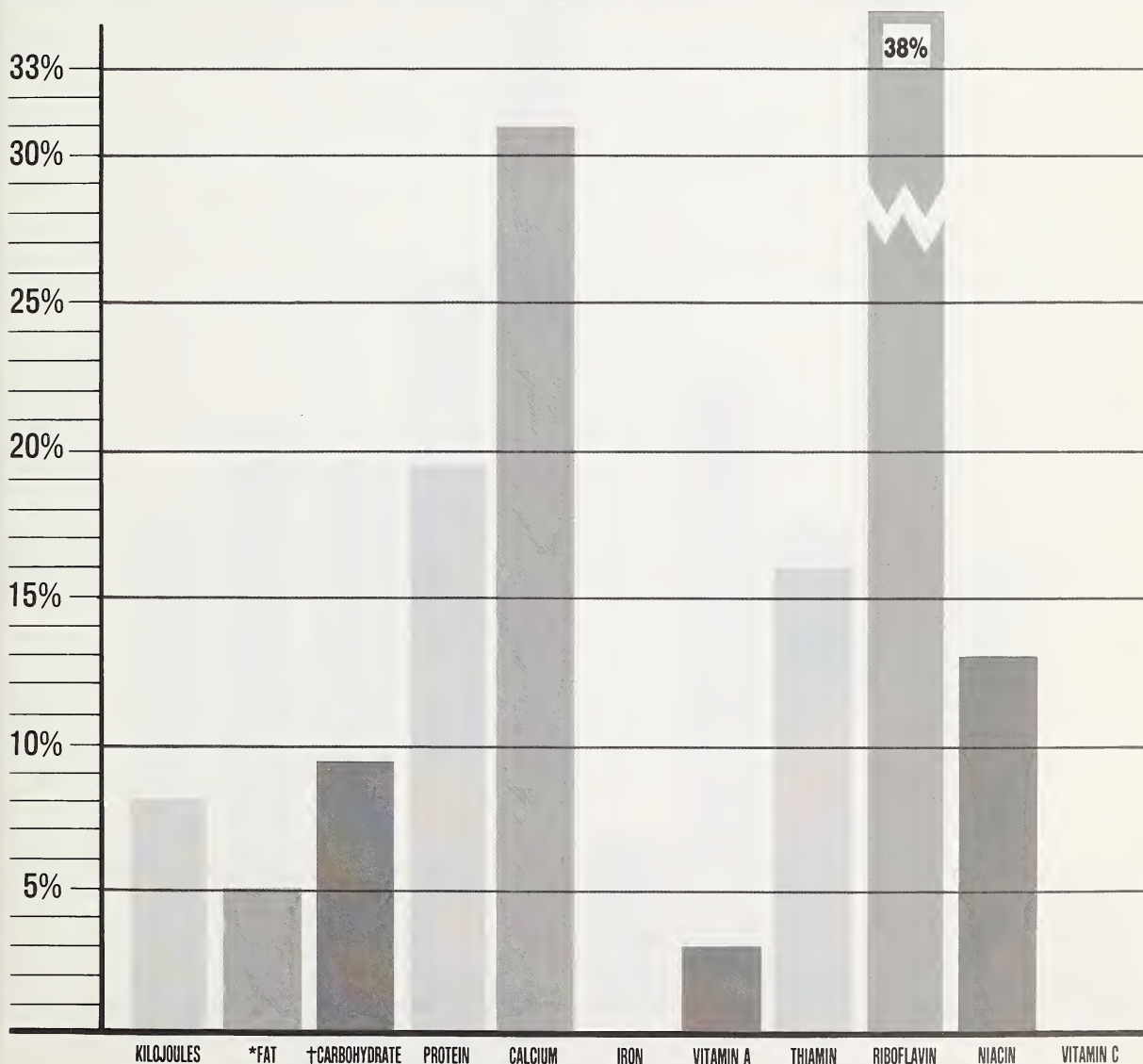
Dietary Standard
for Canada (1982)
Standards alimentaires
Canadiens (1982)

Alberta
AGRICULTURE

Adapted from
Ontario Milk Marketing
Board (1983)

YOGHURT

fruit flavoured
175 g (6 oz) volume
740 kJ (179 Cal)



*Calculation of fat based on
35% of required kilojoules

†Calculation of carbohydrate based
on 50% of required kilojoules

CONTRIBUTION TO RECOMMENDED INTAKE...TEENAGER

(AGE 13-15 FEMALE)

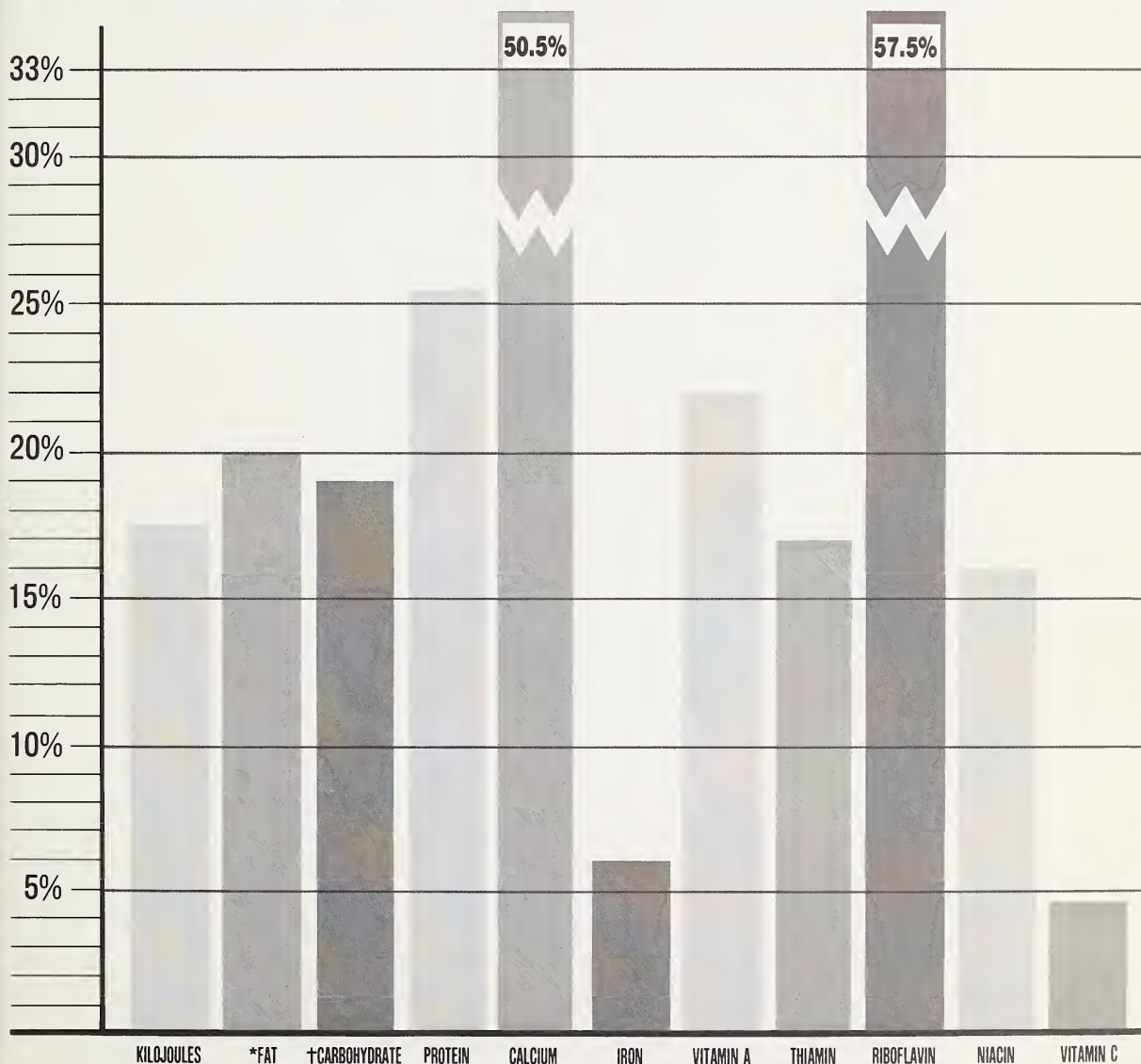
Dietary Standard
for Canada (1982)
Standards alimentaires
Canadiens (1982)

Alberta
AGRICULTURE

Adapted from
Ontario Milk Marketing
Board (1983)

CHOCOLATE MILKSHAKE

whole milk 250 mL (8 oz) volume
ice cream 125 mL (4 oz) volume
chocolate syrup 30 mL (2 tbsp) volume
1630 kJ (388 Cal)



*Calculation of fat based on
35% of required kilojoules

†Calculation of carbohydrate based
on 50% of required kilojoules

CONTRIBUTION TO RECOMMENDED INTAKE...TEENAGER
(AGE 13-15 FEMALE)

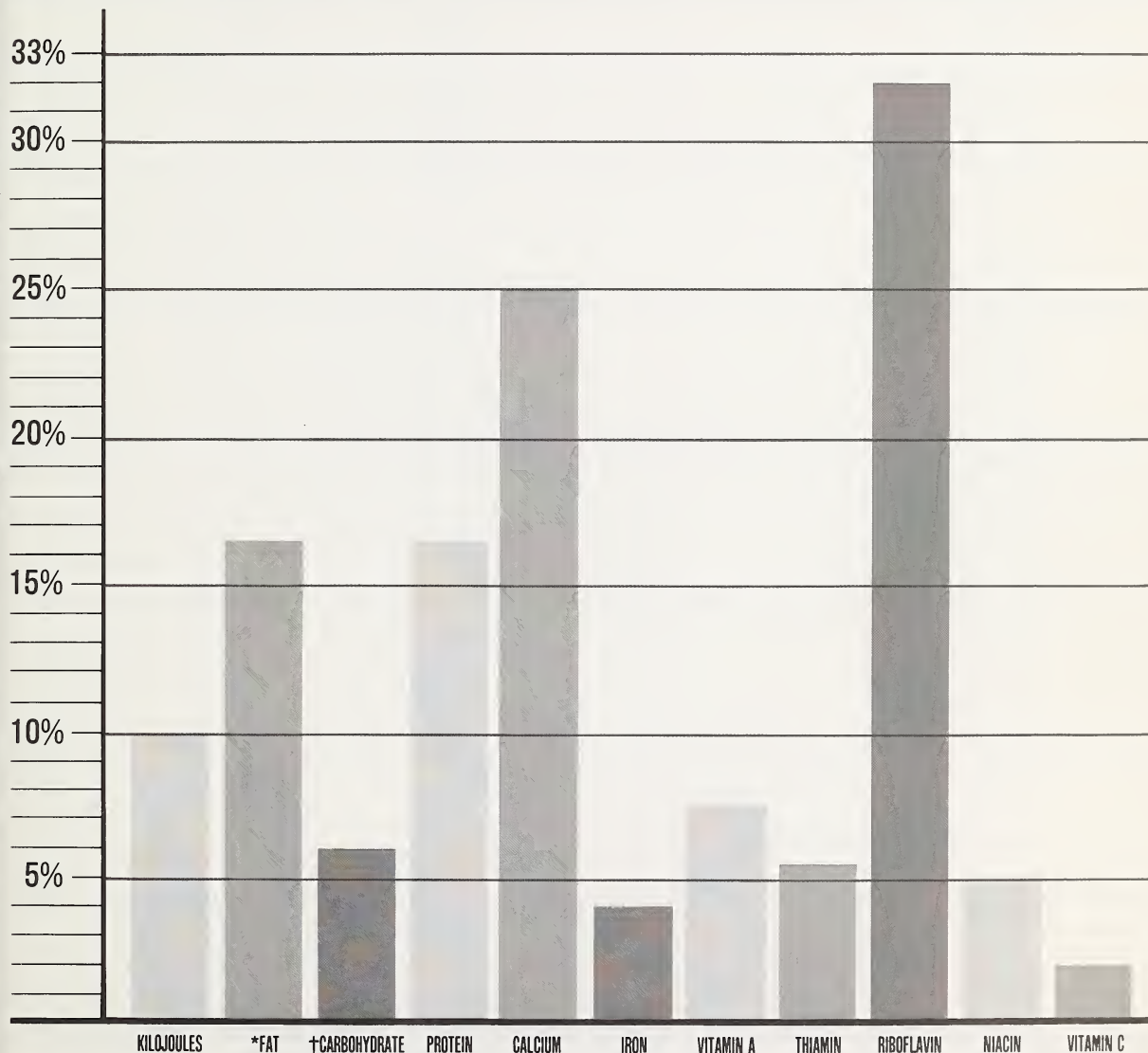
Dietary Standard
for Canada (1982)
Standards alimentaires
Canadiens (1982)

Alberta
AGRICULTURE

Adapted from
Ontario Milk Marketing
Board (1983)

CREAM OF MUSHROOM SOUP

prepared with milk
250 mL (8 oz) volume
950 kJ (226 Cal)



*Calculation of fat based on 35% of required kilojoules
†Calculation of carbohydrate based on 50% of required kilojoules

CONTRIBUTION TO RECOMMENDED INTAKE...TEENAGER
(AGE 13-15 FEMALE)

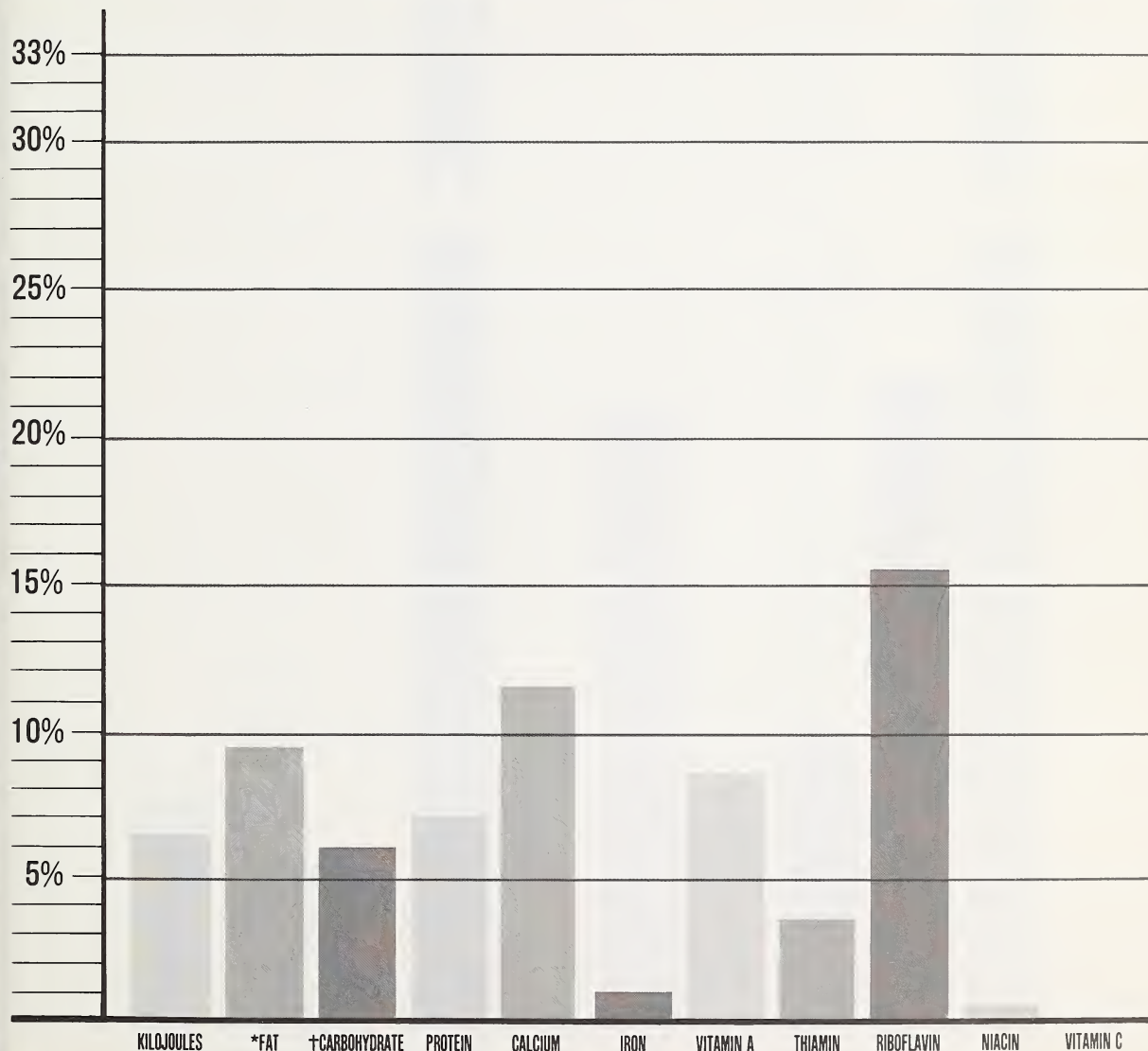
Dietary Standard for Canada (1982)
Standards alimentaires Canadiens (1982)

Alberta
AGRICULTURE

Adapted from Ontario Milk Marketing Board (1983)

ICE CREAM

vanilla
approx. 10% fat
125 mL (4 oz) volume
590 kJ (141 Cal)



*Calculation of fat based on

35% of required kilojoules

†Calculation of carbohydrate based

on 50% of required kilojoules

CONTRIBUTION TO RECOMMENDED INTAKE...TEENAGER

(AGE 13-15 FEMALE)

Dietary Standard

for Canada (1982)

Standards alimentaires

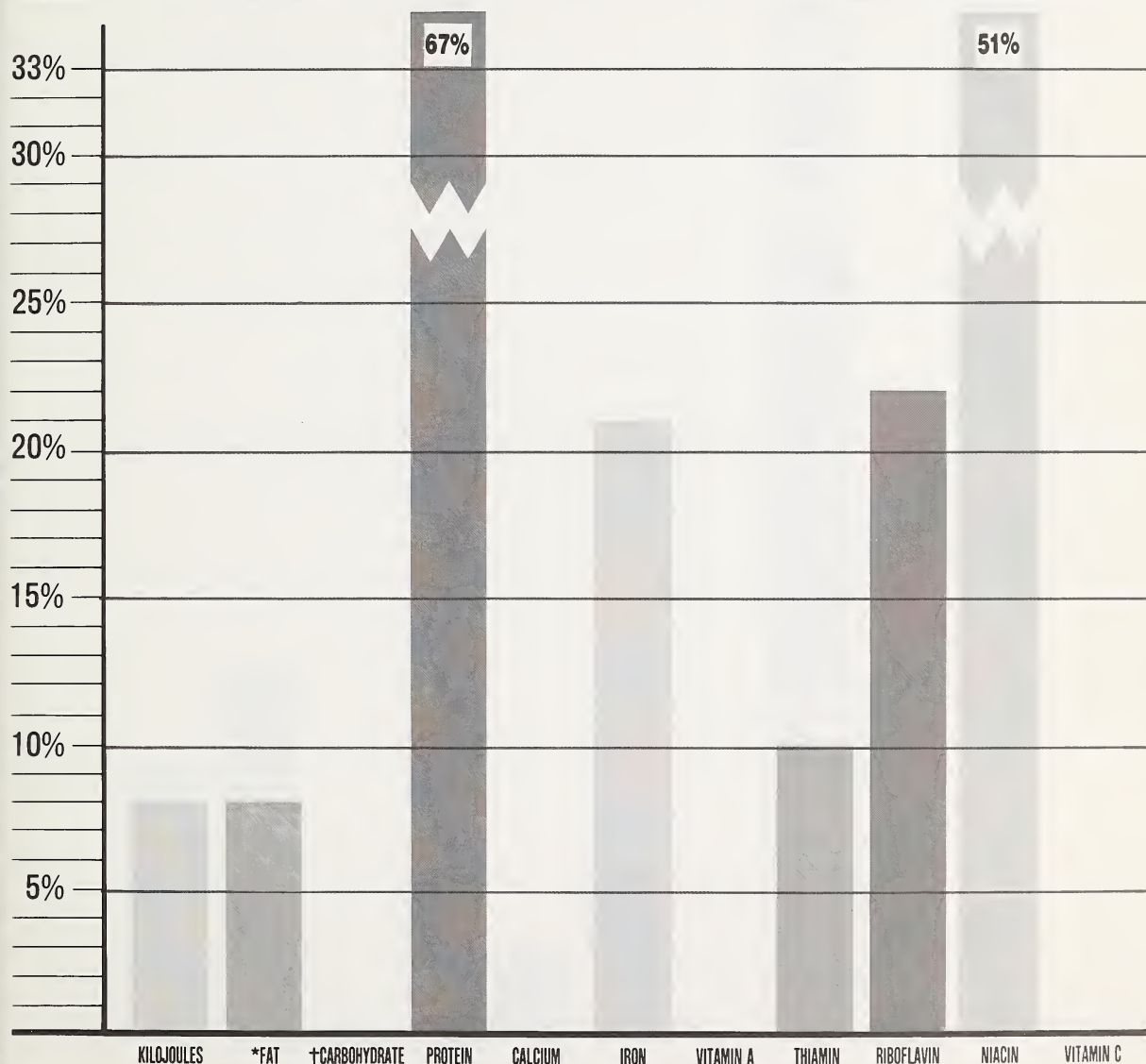
Canadiens (1982)

Alberta
AGRICULTURE

Adapted from
Ontario Milk Marketing
Board (1983)

ROAST BEEF

lean only, 90 g (3 oz)
741 kJ (177 Cal)



CONTRIBUTION TO RECOMMENDED INTAKE...TEENAGER

(AGE 13-15 FEMALE)

*Calculation of fat based on
35% of required kilojoules

†Calculation of carbohydrate based
on 50% of required kilojoules

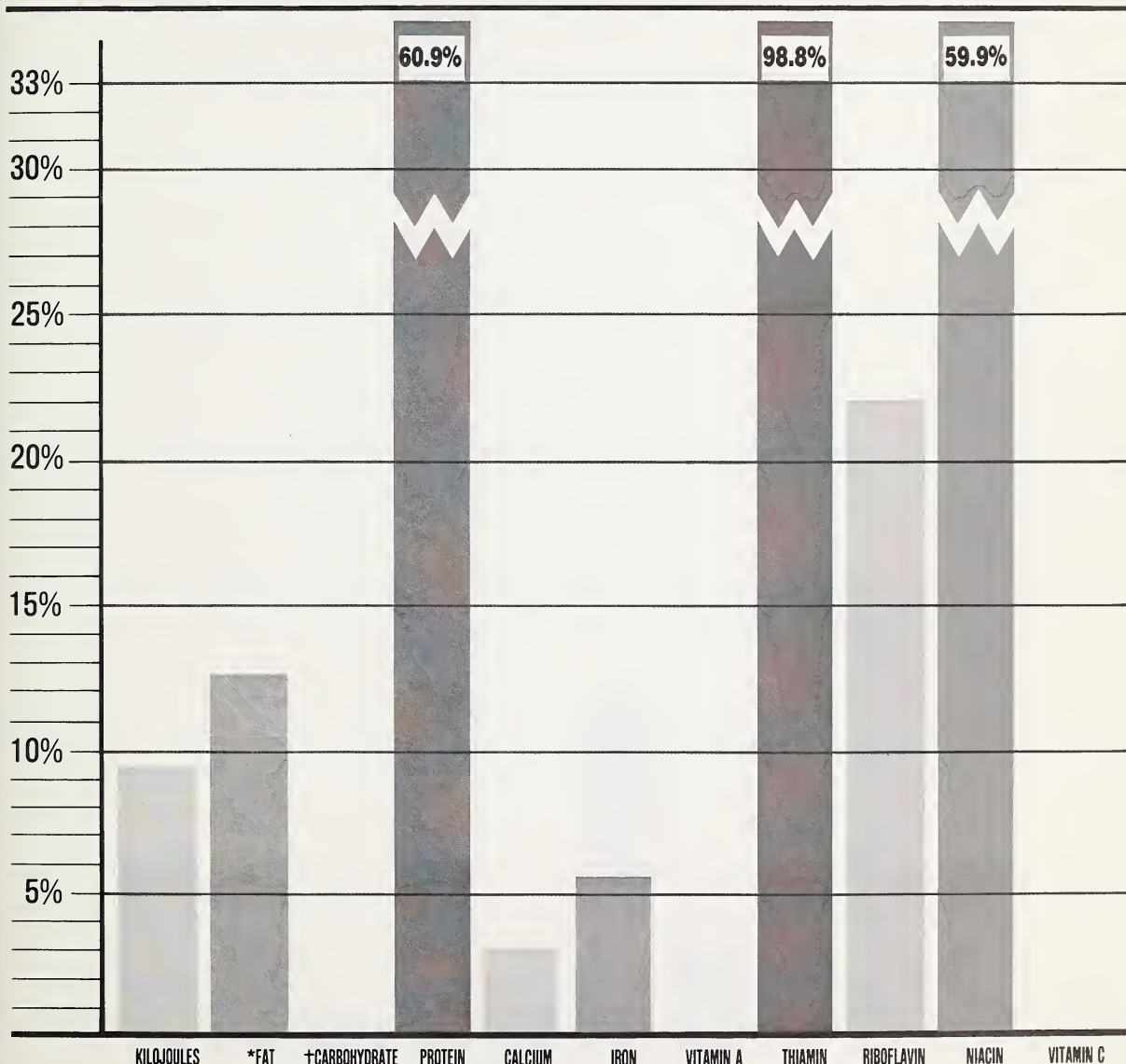
Dietary Standard
for Canada (1982)
Standards alimentaires
Canadiens (1982)

Alberta
AGRICULTURE

Adapted from
Ontario Milk Marketing
Board (1983)

ROAST PORK

lean only, 90 g (3 oz)
870 kJ (203 Cal)



CONTRIBUTION TO RECOMMENDED INTAKE...TEENAGER
(AGE 13-15 FEMALE)

*Calculation of fat based on
35% of required kilojoules
†Calculation of carbohydrate based
on 50% of required kilojoules

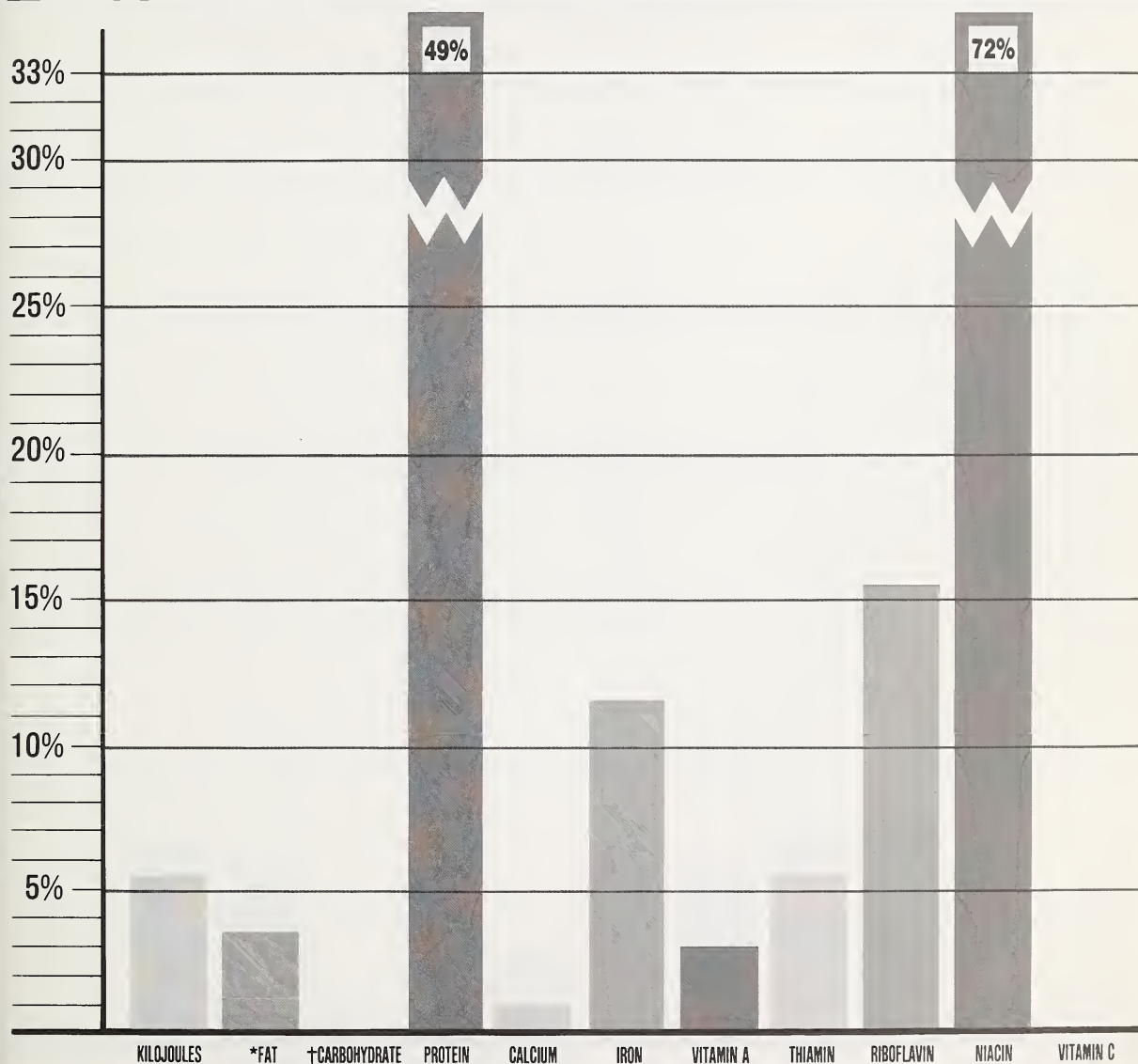
Dietary Standard
for Canada (1982)
Standards alimentaires
Canadiens (1982)

Alberta
AGRICULTURE

Adapted from
Ontario Milk Marketing
Board (1983)

CHICKEN

meat only, 90 g (3 oz)
510 kJ (122 Cal)



*Calculation of fat based on
35% of required kilojoules
†Calculation of carbohydrate based
on 50% of required kilojoules

CONTRIBUTION TO RECOMMENDED INTAKE...TEENAGER
(AGE 13-15 FEMALE)

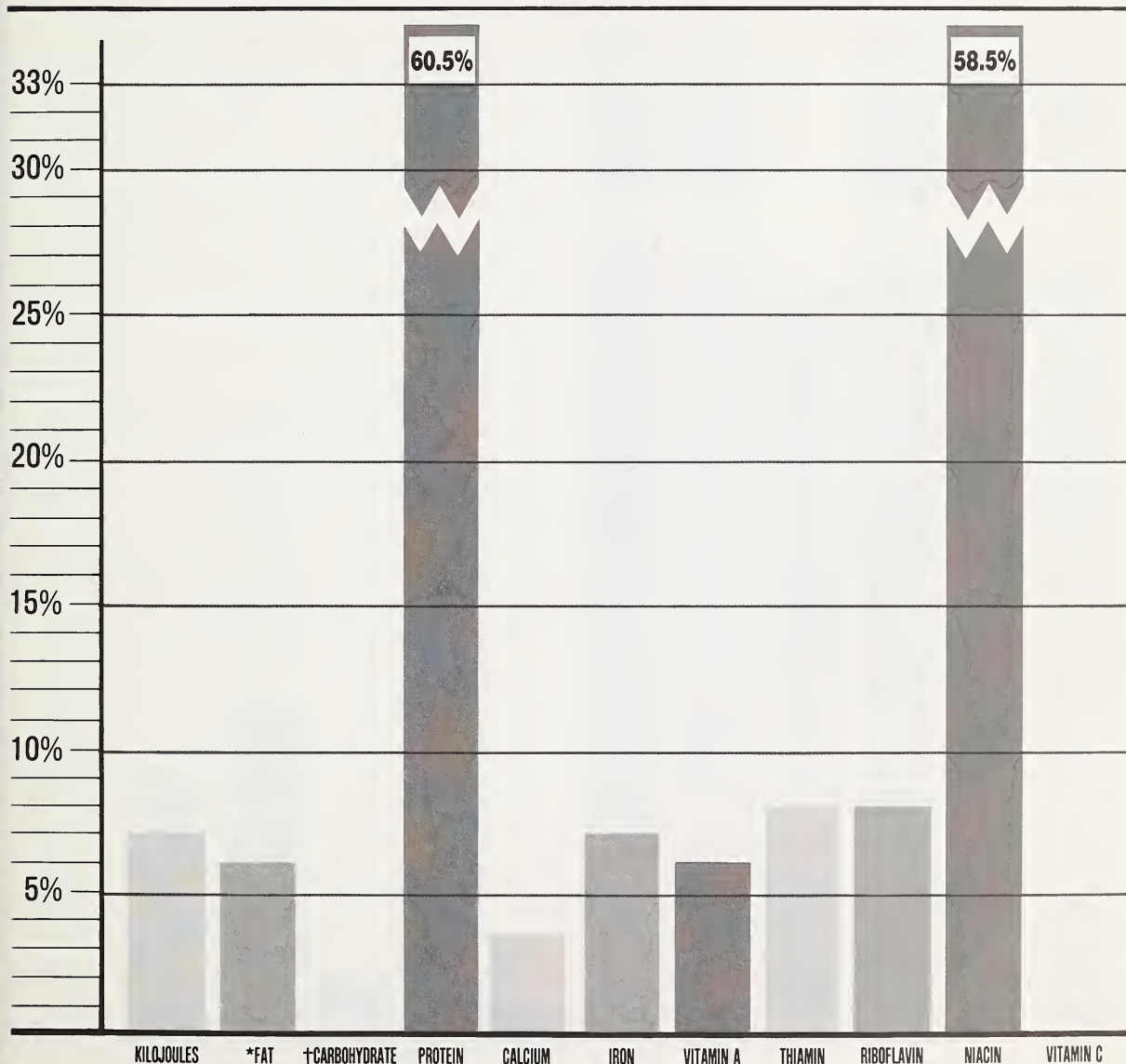
Dietary Standard
for Canada (1982)
Standards alimentaires
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Alberta
AGRICULTURE

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Board (1983)

FISH

broiled cod 90 g (3 oz)
640 kJ (153 Cal)



*Calculation of fat based on
35% of required kilojoules

†Calculation of carbohydrate based
on 50% of required kilojoules

CONTRIBUTION TO RECOMMENDED INTAKE...TEENAGER

(AGE 13-15 FEMALE)

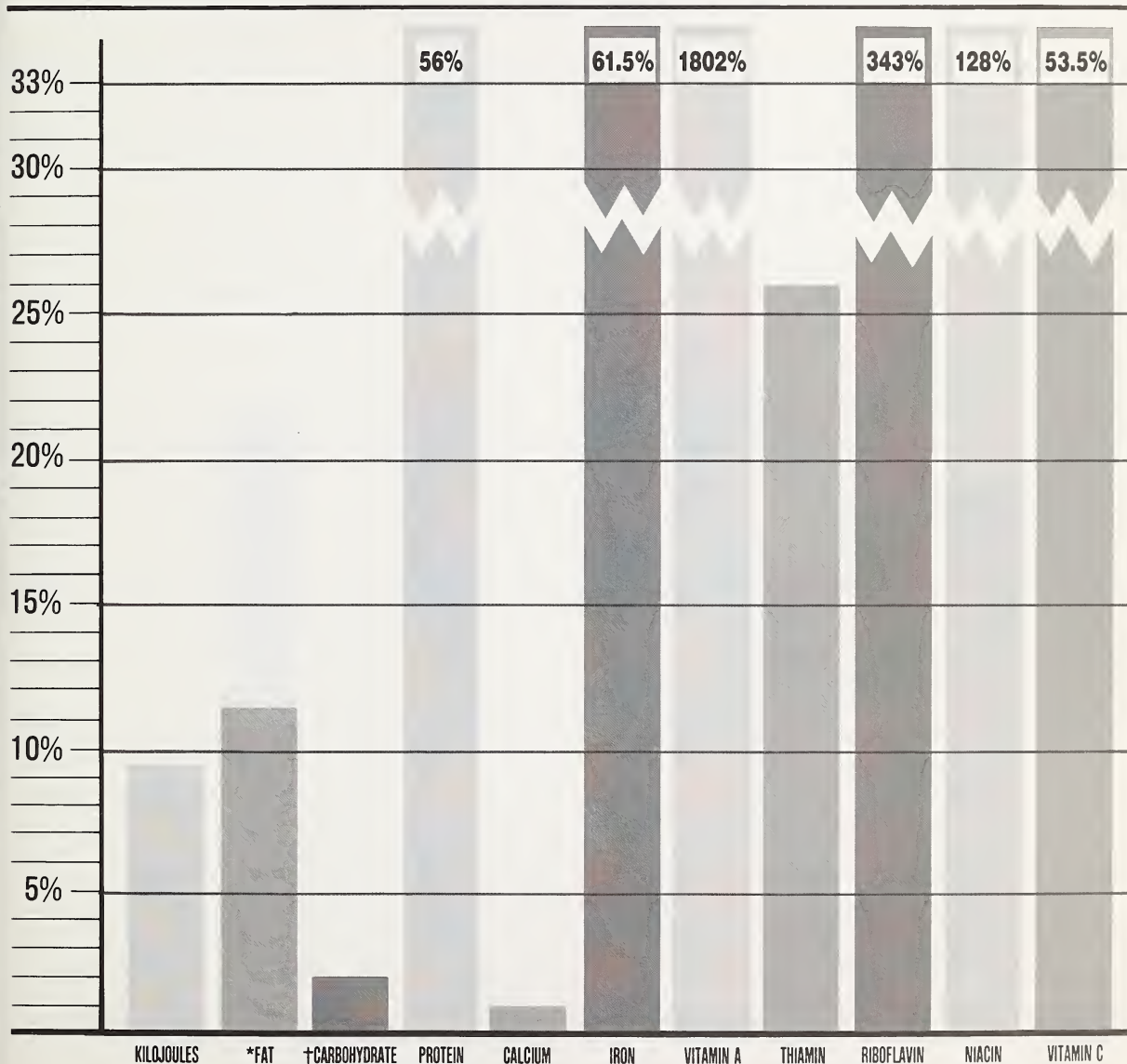
Dietary Standard
for Canada (1982)
Standards alimentaires
Canadiens (1982)

Alberta
AGRICULTURE

Adapted from
Ontario Milk Marketing
Board (1983)

BEEF LIVER

fried
90 g (3 oz)
860 kJ (206 Cal)



*Calculation of fat based on
35% of required kilojoules

†Calculation of carbohydrate based
on 50% of required kilojoules

CONTRIBUTION TO RECOMMENDED INTAKE...TEENAGER

(AGE 13-15 FEMALE)

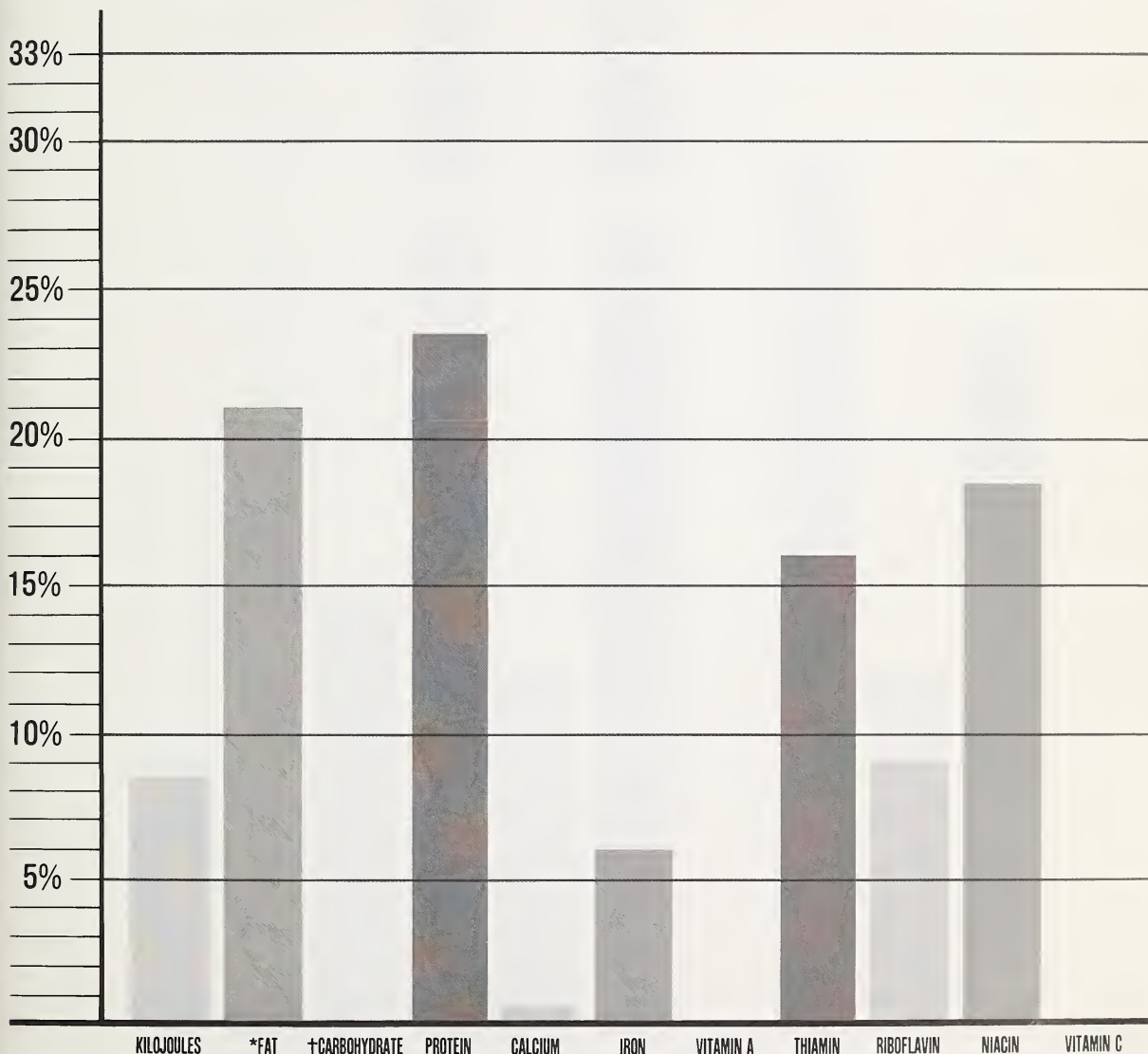
Dietary Standard
for Canada (1982)
Standards alimentaires
Canadiens (1982)

Alberta
AGRICULTURE

Adapted from
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Board (1983)

BACON

fried crisp, 4 strips
760 kJ (184 Cal)



*Calculation of fat based on 35% of required kilojoules

†Calculation of carbohydrate based on 50% of required kilojoules

CONTRIBUTION TO RECOMMENDED INTAKE...TEENAGER

(AGE 13-15 FEMALE)

Dietary Standard for Canada (1982)
Standards alimentaires Canadiens (1982)

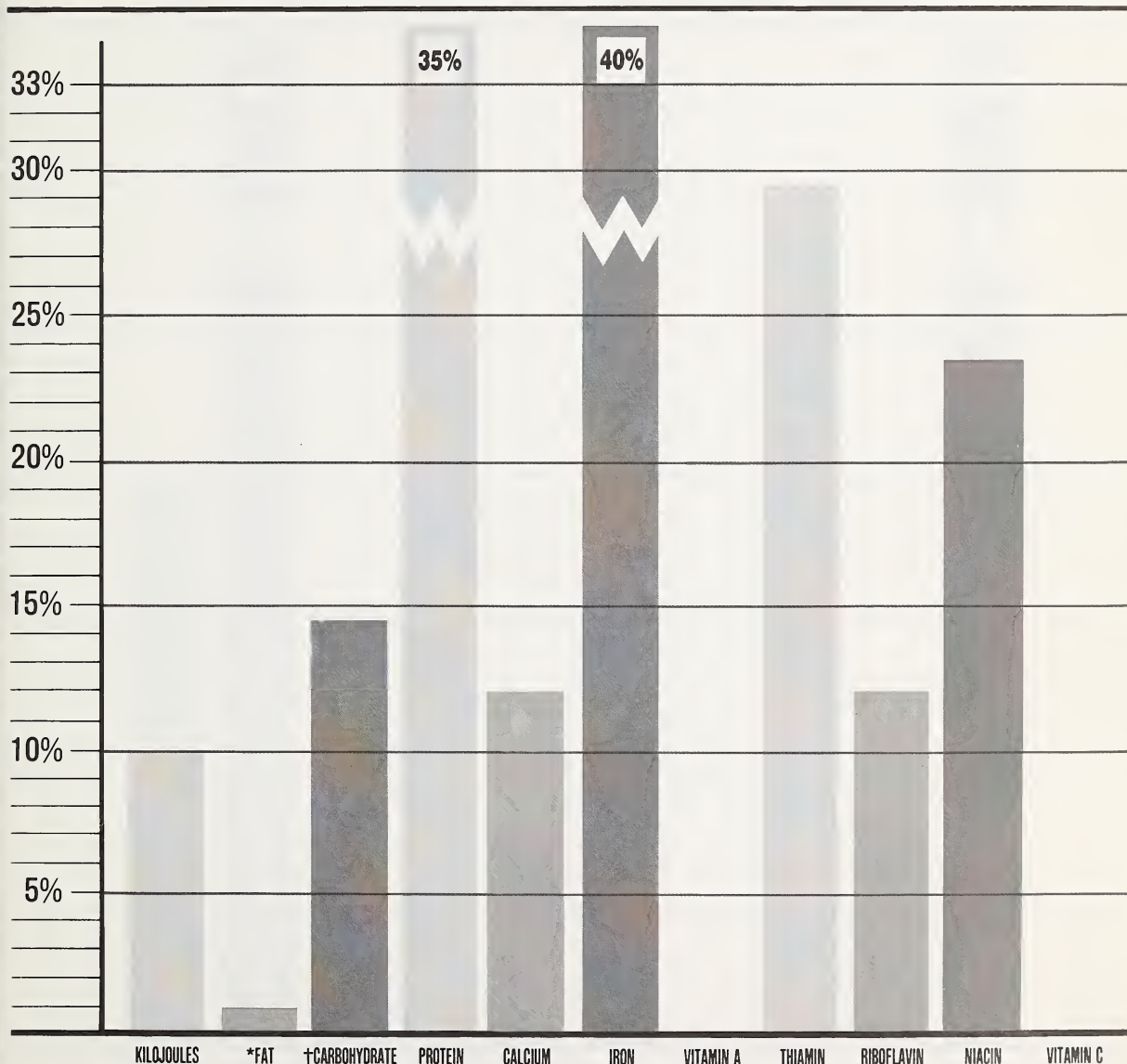
Alberta
AGRICULTURE

Adapted from Ontario Milk Marketing Board (1983)



BAKED BEANS

250 mL (8 oz) volume
930 kJ (222 Cal)



*Calculation of fat based on
35% of required kilojoules
†Calculation of carbohydrate based
on 50% of required kilojoules

CONTRIBUTION TO RECOMMENDED INTAKE...TEENAGER
(AGE 13-15 FEMALE)

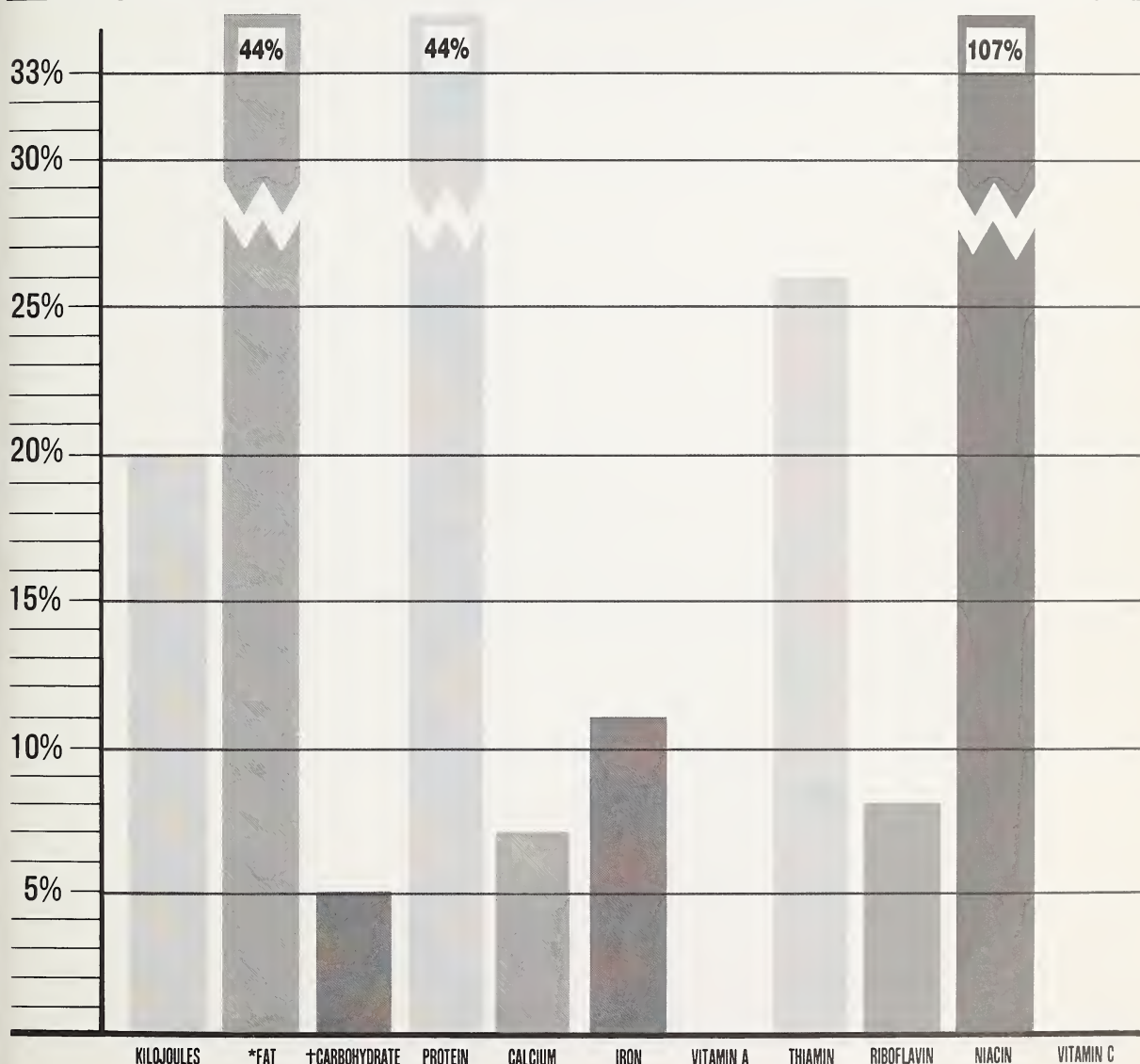
Dietary Standard
for Canada (1982)
Standards alimentaires
Canadiens (1982)

Alberta
AGRICULTURE

Adapted from
Ontario Milk Marketing
Board (1983)

PEANUTS

roasted, salted
125 mL (4 oz) volume
1830 kJ (438 Cal)



*Calculation of fat based on 35% of required kilojoules

†Calculation of carbohydrate based on 50% of required kilojoules

CONTRIBUTION TO RECOMMENDED INTAKE...TEENAGER

(AGE 13-15 FEMALE)

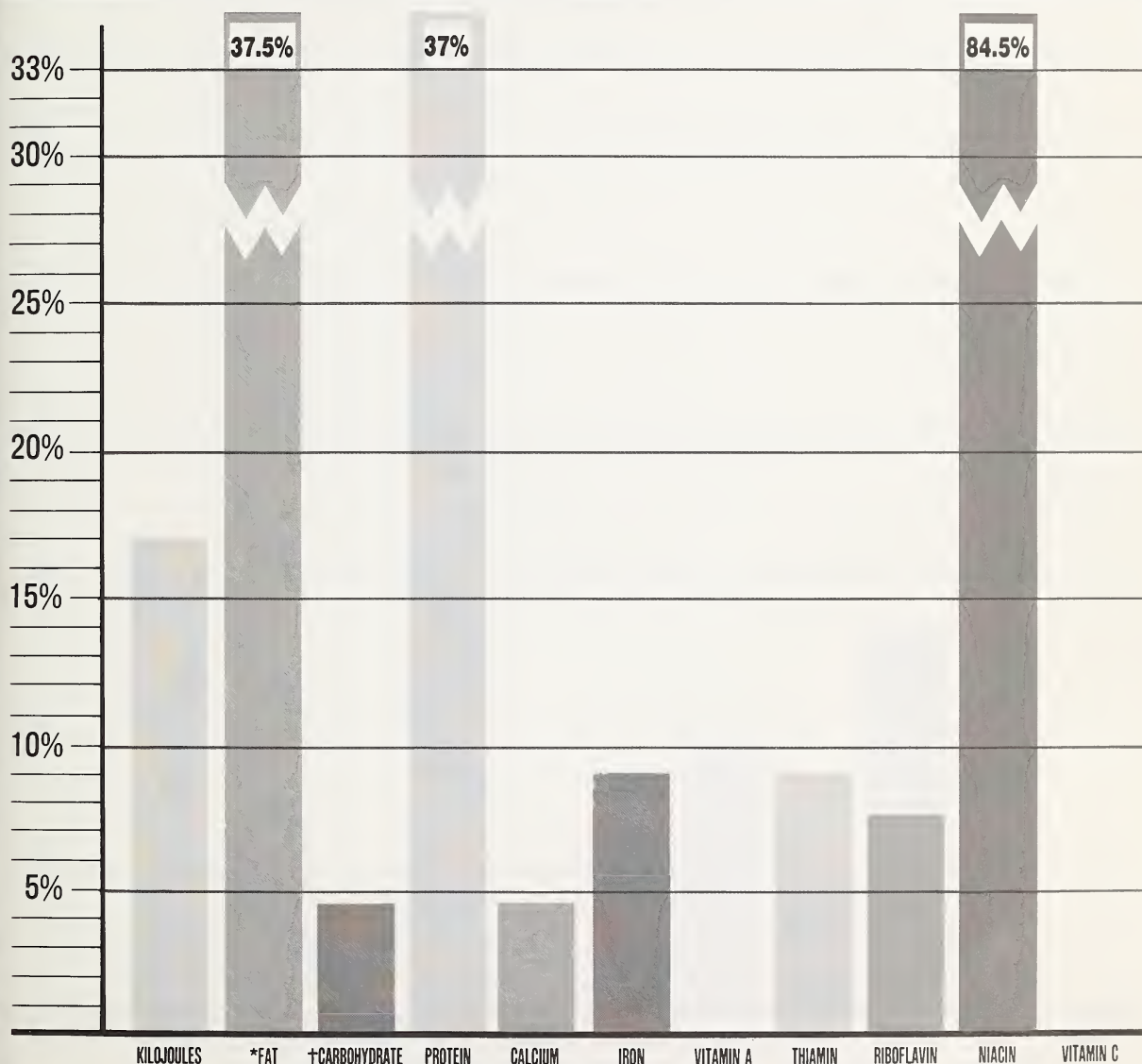
Dietary Standard for Canada (1982)
Standards alimentaires Canadiens (1982)

Alberta
AGRICULTURE

Adapted from Ontario Milk Marketing Board (1983)

PEANUT BUTTER

60 mL (4 tbsp)
1600 kJ (380 Cal)



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35% of required kilojoules
†Calculation of carbohydrate based
on 50% of required kilojoules

CONTRIBUTION TO RECOMMENDED INTAKE...TEENAGER

(AGE 13-15 FEMALE)

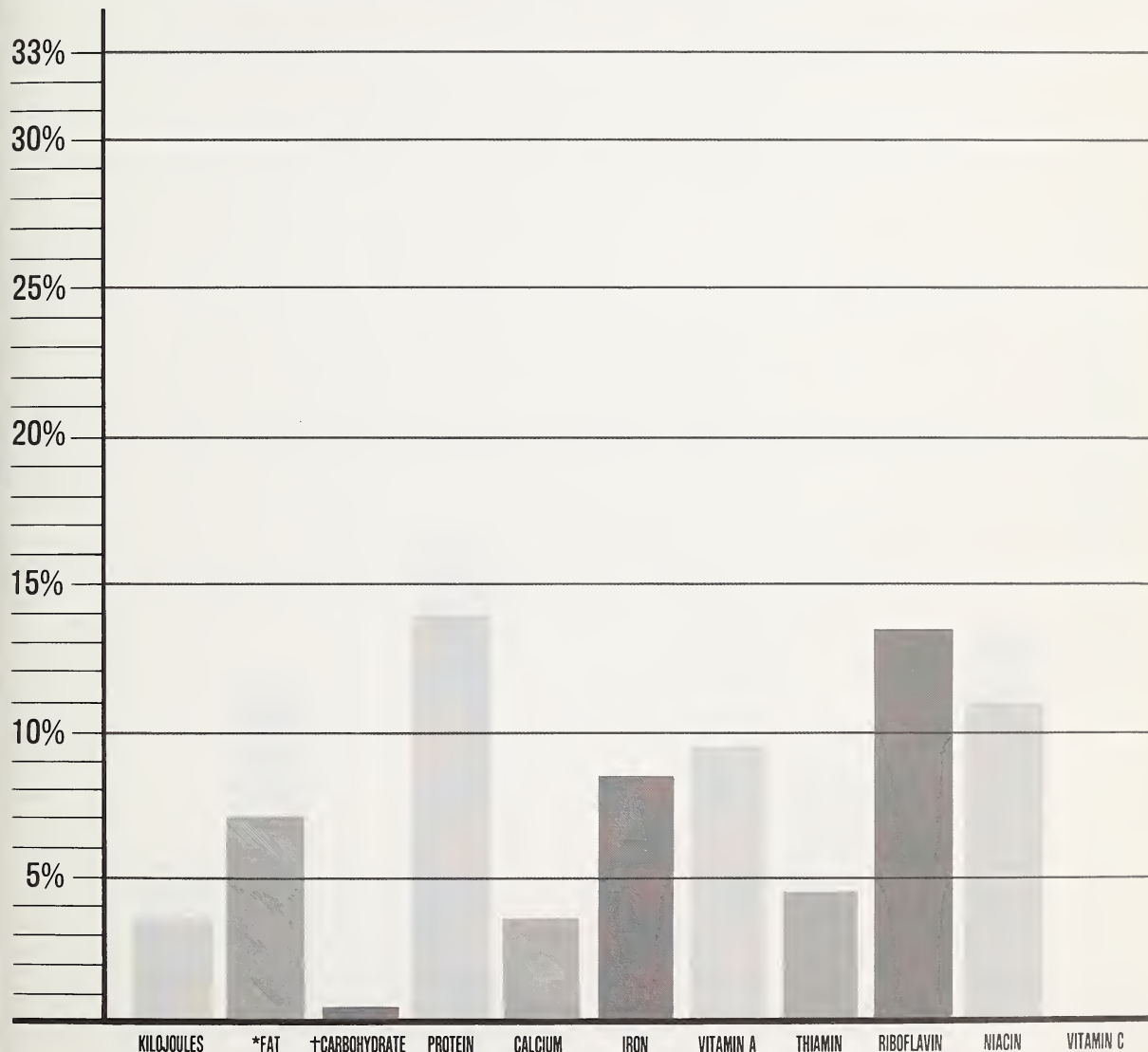
Dietary Standard
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EGG

large, soft cooked (50 g)
330 kJ (79 Cal)



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(AGE 13-15 FEMALE)

*Calculation of fat based on
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†Calculation of carbohydrate based
on 50% of required kilojoules

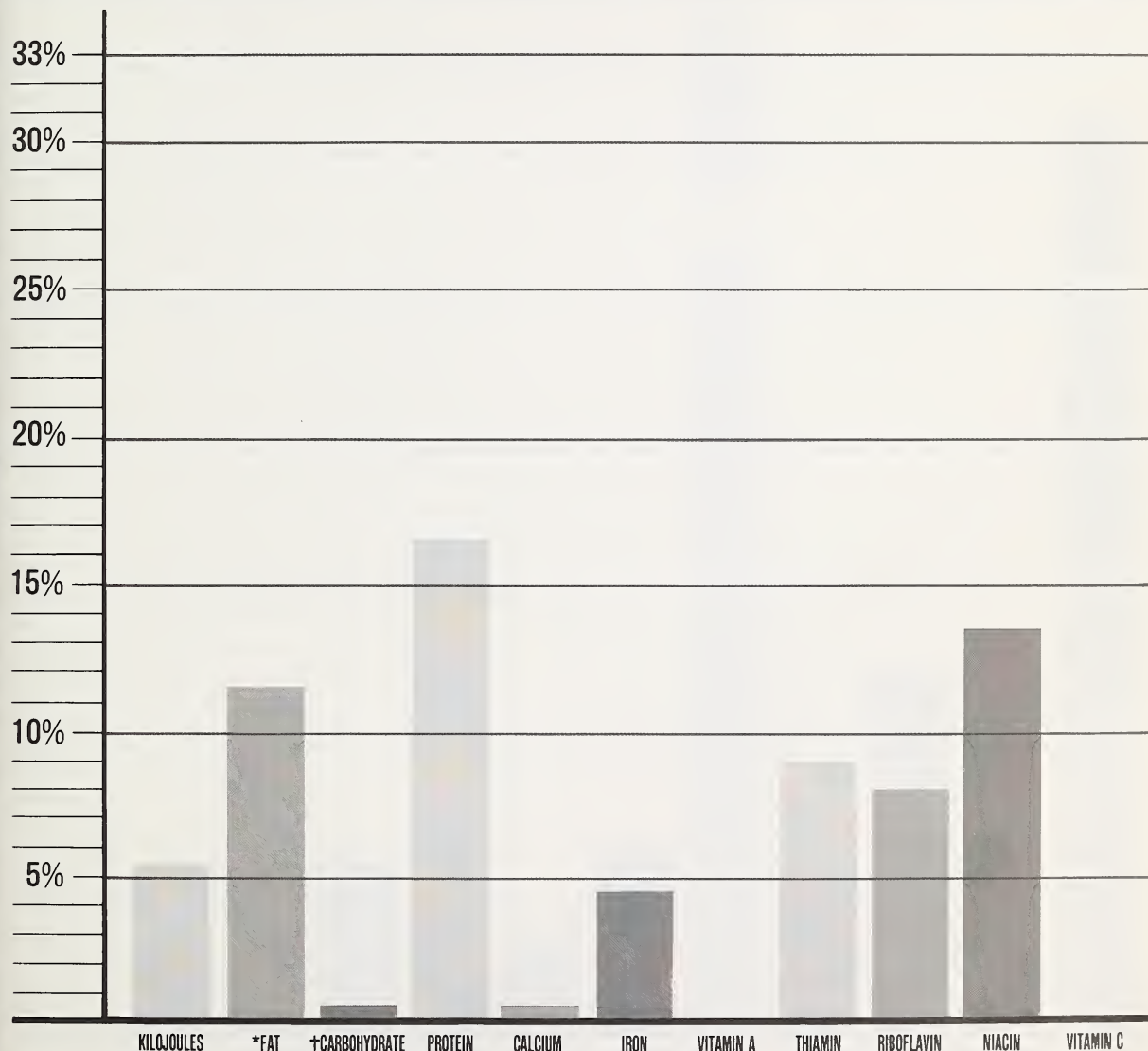
Dietary Standard
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WIENER

1 wiener, (50 g)
520 kJ (124 Cal)



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†Calculation of carbohydrate based on 50% of required kilojoules

CONTRIBUTION TO RECOMMENDED INTAKE...TEENAGER
(AGE 13-15 FEMALE)

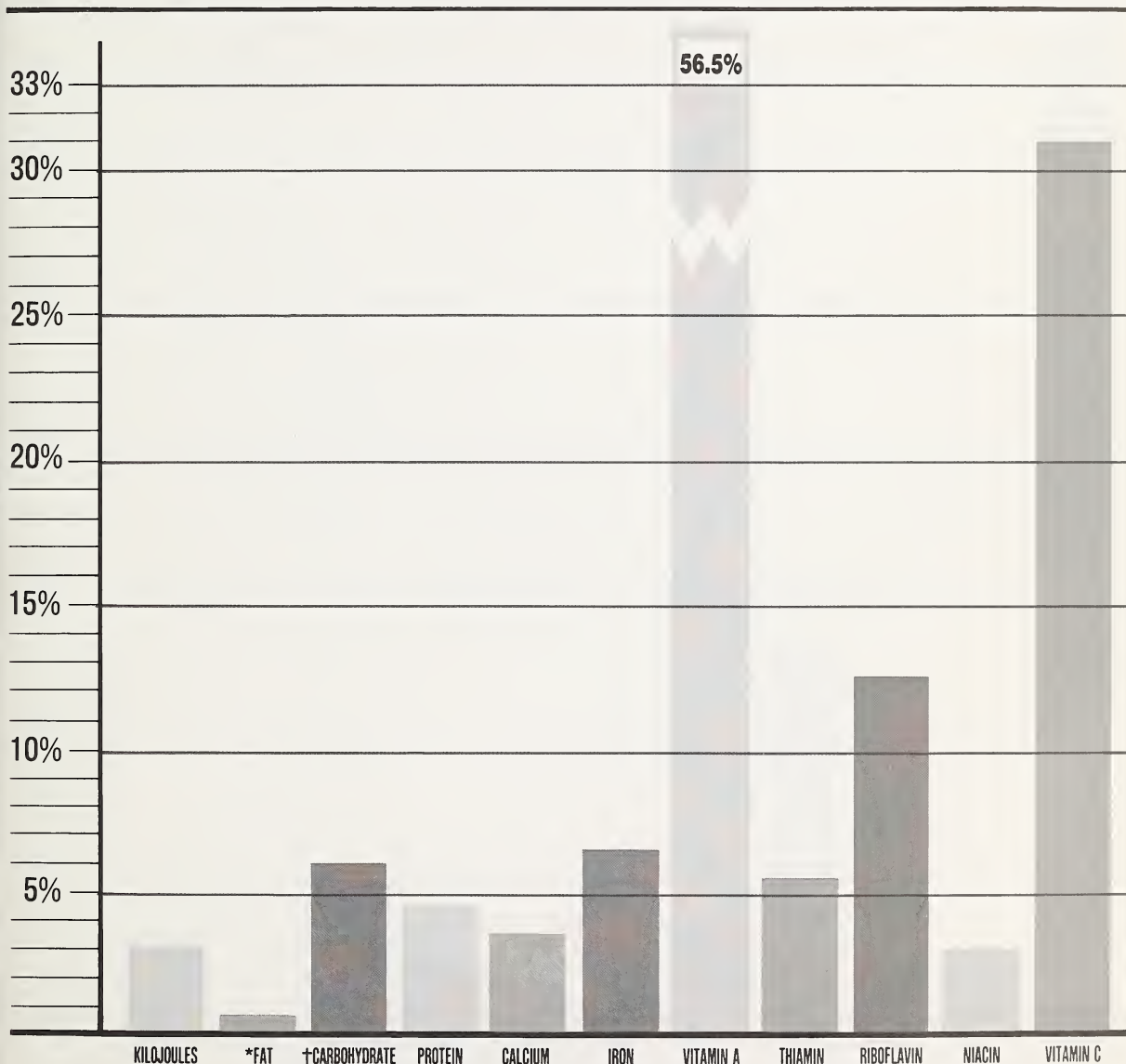
Dietary Standard
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Canadiens (1982)

Alberta
AGRICULTURE

Adapted from
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WINTER SQUASH

baked, mashed
125 mL (4 oz) volume
290 kJ (69 Cal)



CONTRIBUTION TO RECOMMENDED INTAKE...TEENAGER

(AGE 13-15 FEMALE)

*Calculation of fat based on
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†Calculation of carbohydrate based
on 50% of required kilojoules

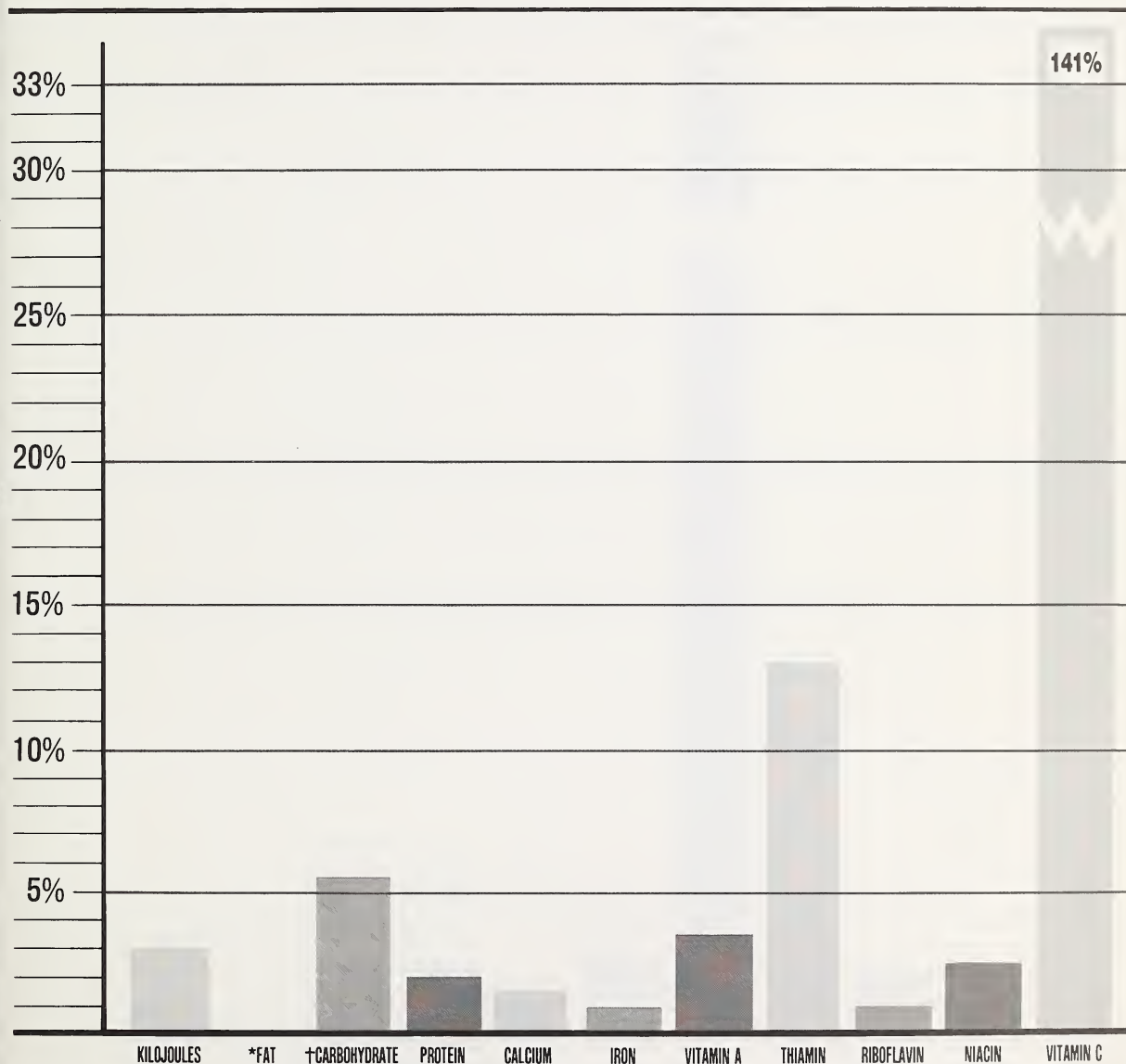
Dietary Standard
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Standards alimentaires
Canadiens (1982)

Alberta
AGRICULTURE

Adapted from
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Board (1983)

ORANGE JUICE

frozen, diluted
125 mL (4 oz) volume
270 kJ (63 Cal)



*Calculation of fat based on
35% of required kilojoules

†Calculation of carbohydrate based
on 50% of required kilojoules

CONTRIBUTION TO RECOMMENDED INTAKE...TEENAGER
(AGE 13-15 FEMALE)

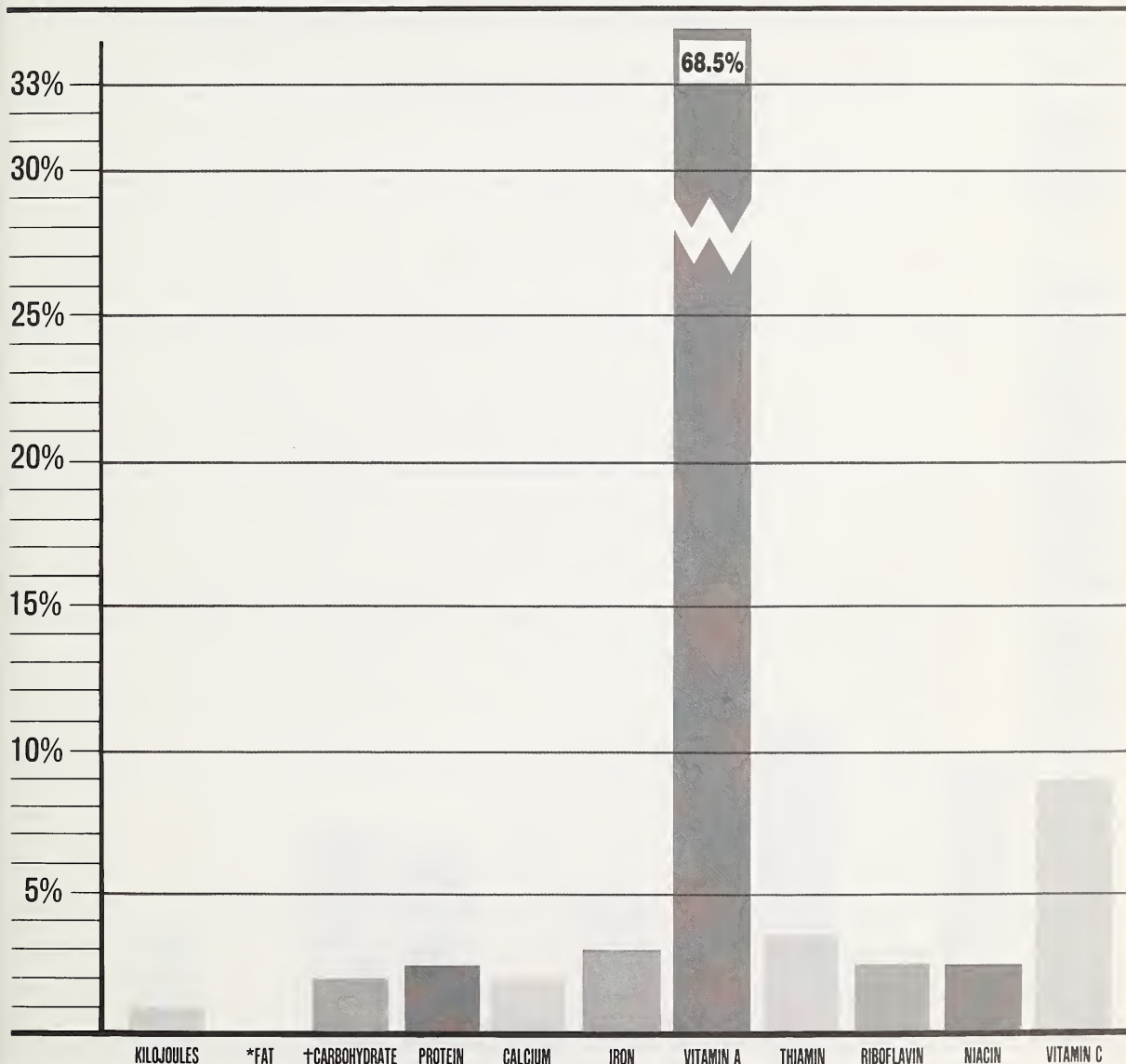
Dietary Standard
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Standards alimentaires
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Alberta
AGRICULTURE

Adapted from
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CARROT

1 medium (50 g)
80 kJ (20 Cal)



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35% of required kilojoules
†Calculation of carbohydrate based
on 50% of required kilojoules

CONTRIBUTION TO RECOMMENDED INTAKE...TEENAGER
(AGE 13-15 FEMALE)

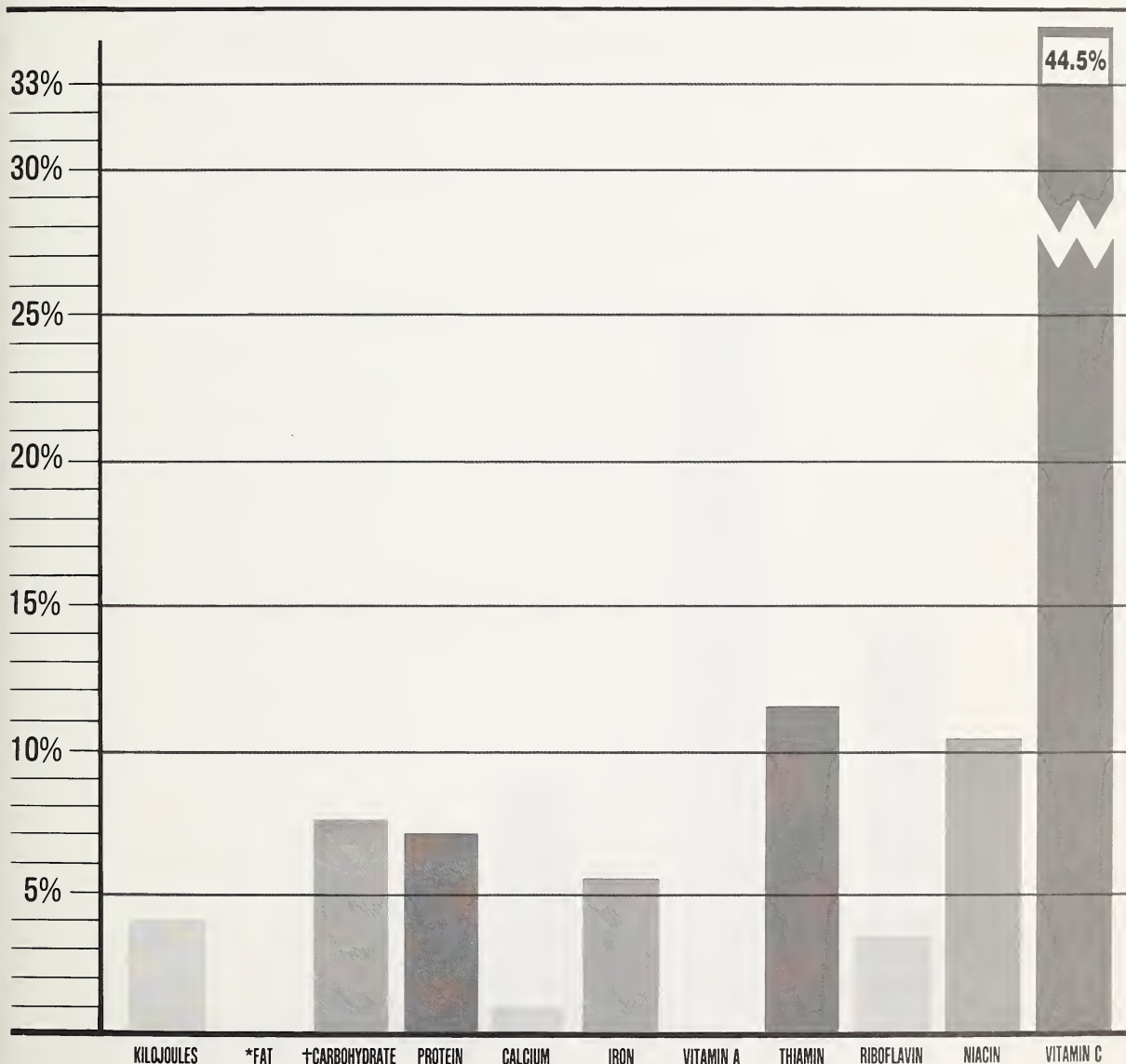
Dietary Standard
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Alberta
AGRICULTURE

Adapted from
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BAKED POTATO

medium (100 g)
380 kJ (91 Cal)



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35% of required kilojoules

†Calculation of carbohydrate based
on 50% of required kilojoules

CONTRIBUTION TO RECOMMENDED INTAKE...TEENAGER

(AGE 13-15 FEMALE)

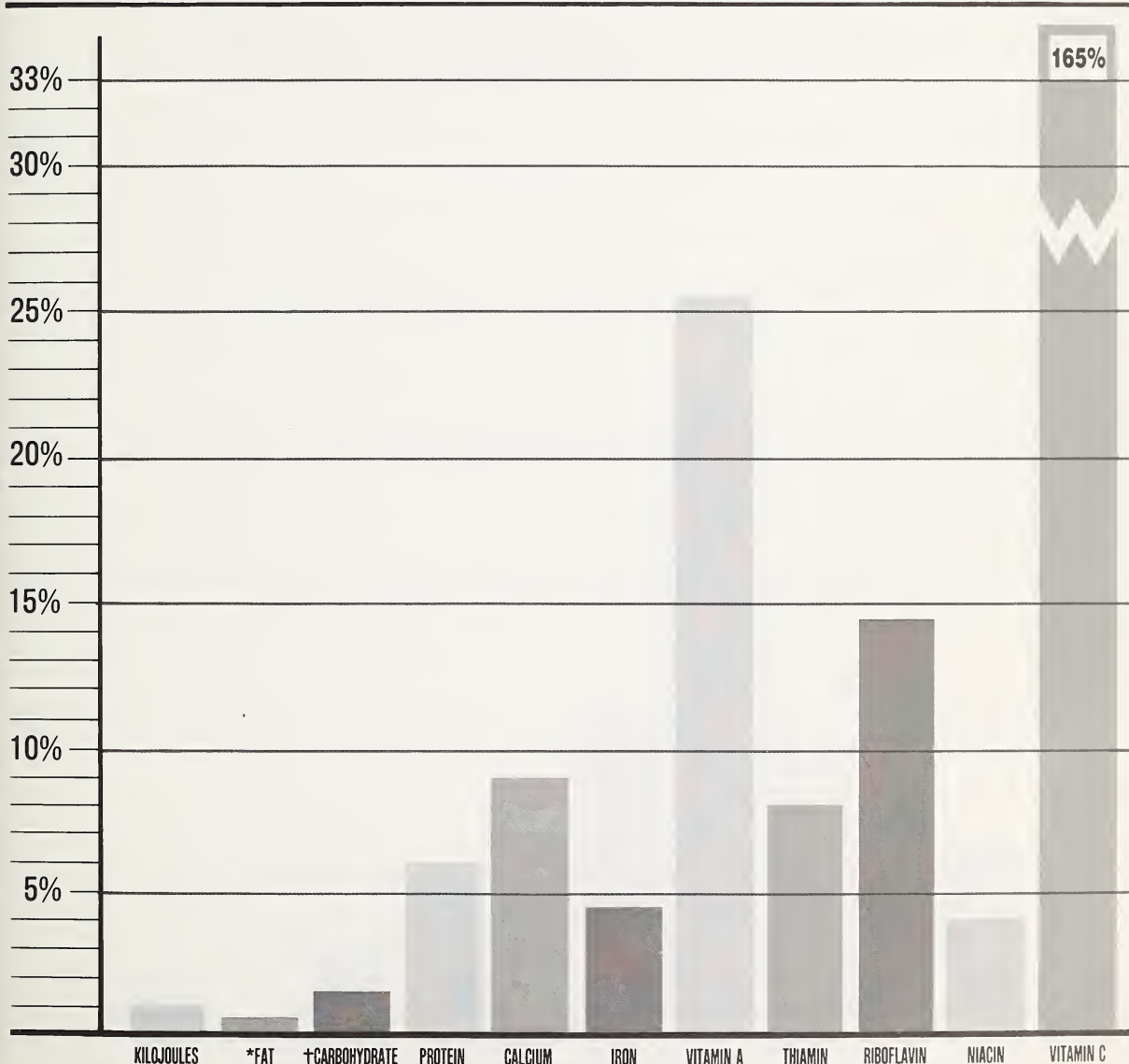
Dietary Standard
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Standards alimentaires
Canadiens (1982)

Alberta
AGRICULTURE

Adapted from
Ontario Milk Marketing
Board (1983)

BROCCOLI

cooked, 125 mL (4 oz)
90 kJ (21 Cal)



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35% of required kilojoules

†Calculation of carbohydrate based
on 50% of required kilojoules

CONTRIBUTION TO RECOMMENDED INTAKE...TEENAGER

(AGE 13-15 FEMALE)

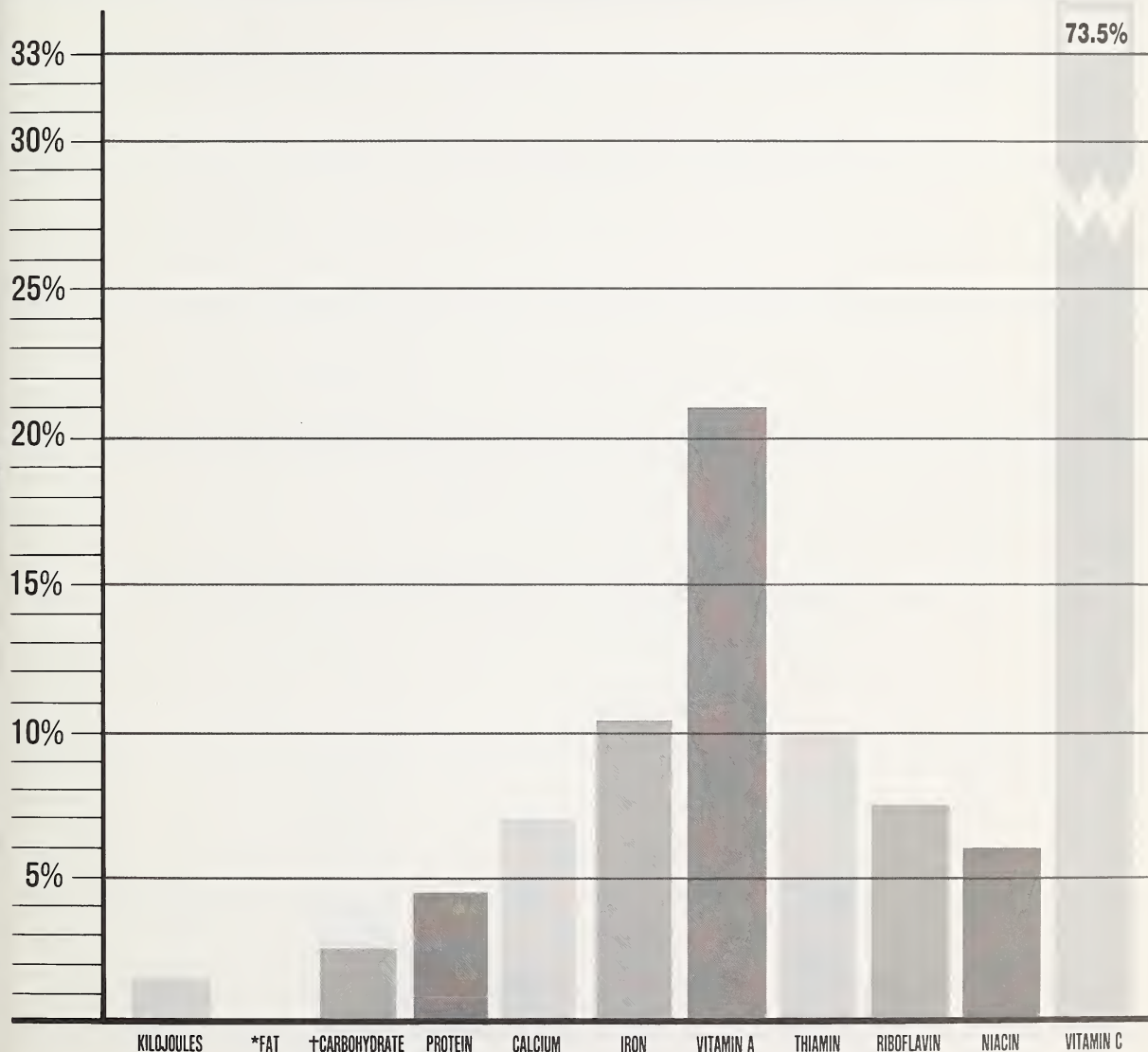
Dietary Standard
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TOSSED GREEN SALAD

without salad dressing
 2 lettuce leaves
 2 radishes
 ½ stalk of celery
 ½ tomato
 500 mL (16 oz) volume
 140 kJ (33 Cal)



*Calculation of fat based on 35% of required kilojoules
 †Calculation of carbohydrate based on 50% of required kilojoules

CONTRIBUTION TO RECOMMENDED INTAKE...TEENAGER
 (AGE 13-15 FEMALE)

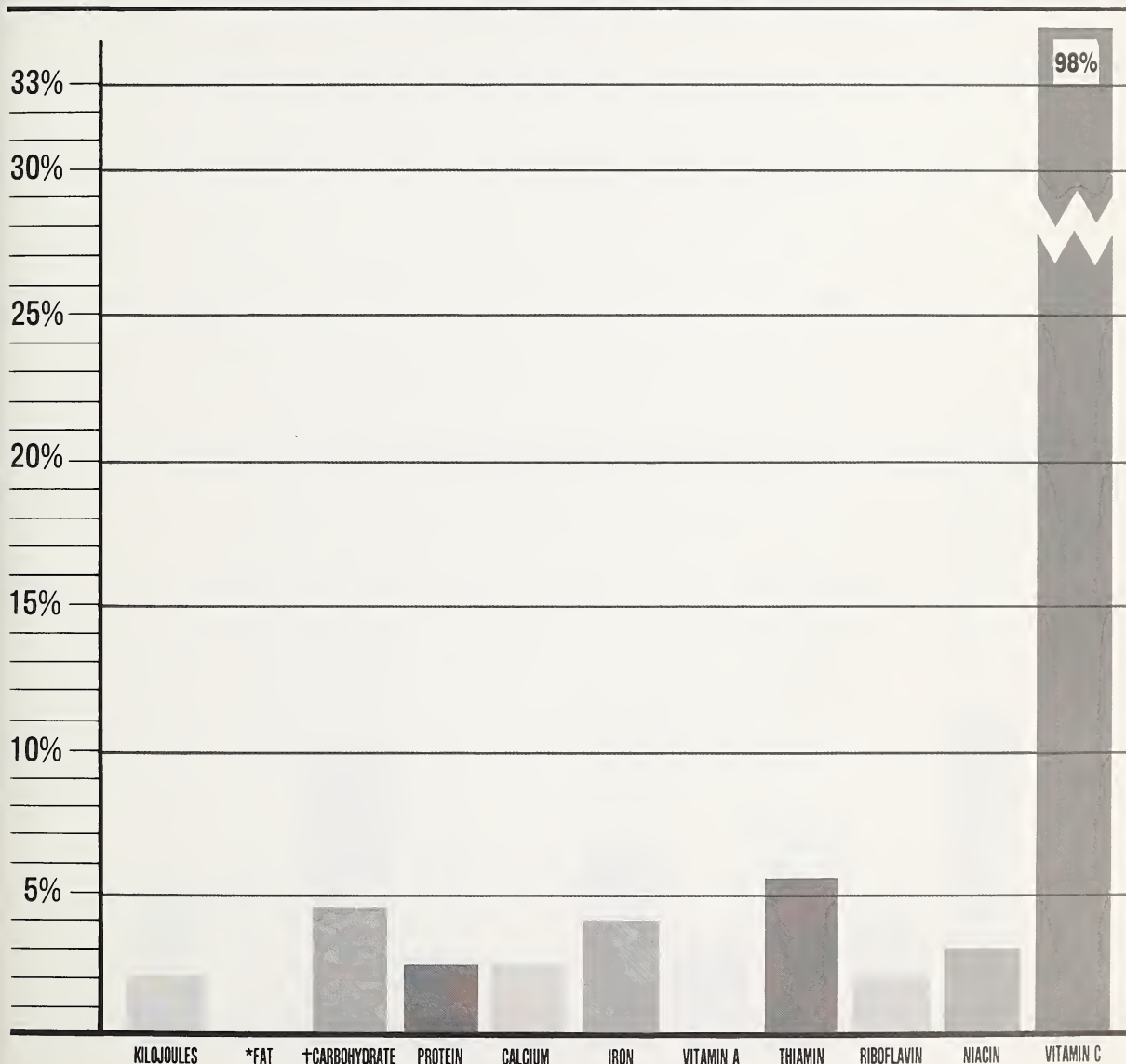
Dietary Standard
 for Canada (1982)
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GRAPEFRUIT

white
½ (241 g)
190 kJ (45 Cal)



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35% of required kilojoules

†Calculation of carbohydrate based
on 50% of required kilojoules

CONTRIBUTION TO RECOMMENDED INTAKE...TEENAGER

(AGE 13-15 FEMALE)

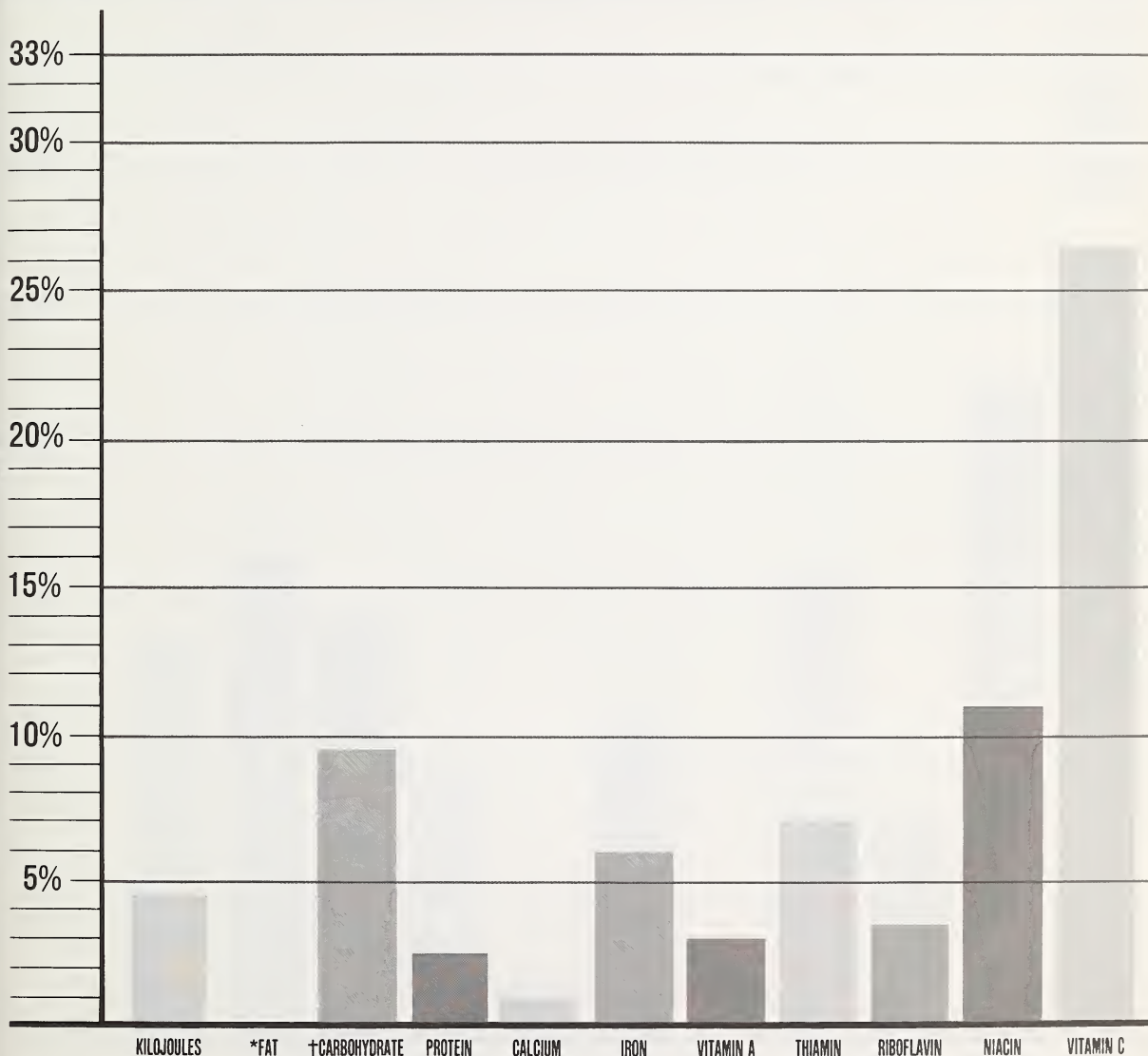
Dietary Standard
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Standards alimentaires
Canadiens (1982)

Alberta
AGRICULTURE

Adapted from
Ontario Milk Marketing
Board (1983)

BANANA

1 medium (175 g)
420 kJ (100 Cal)



*Calculation of fat based on
35% of required kilojoules

†Calculation of carbohydrate based
on 50% of required kilojoules

CONTRIBUTION TO RECOMMENDED INTAKE...TEENAGER
(AGE 13-15 FEMALE)

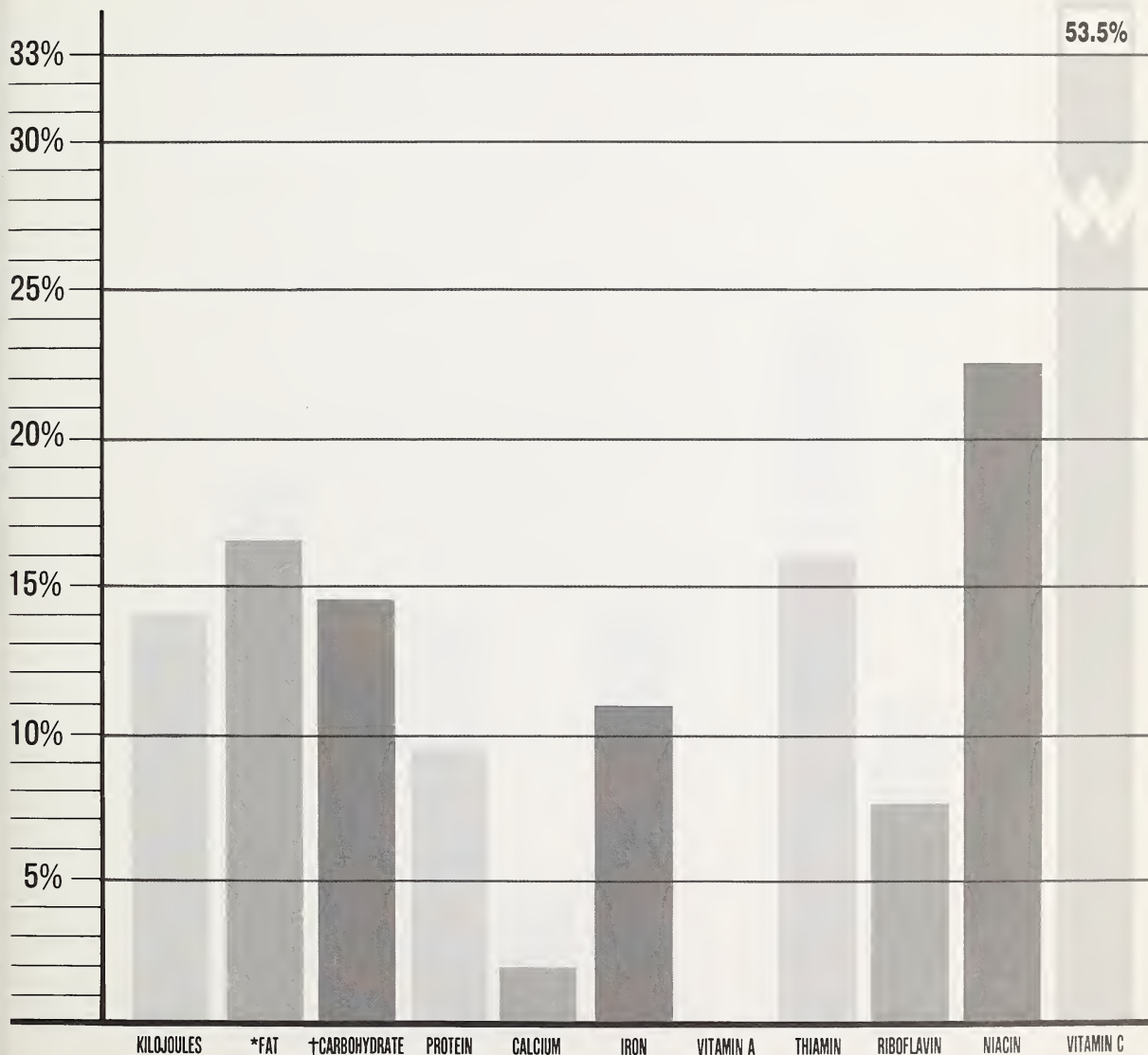
Dietary Standard
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Alberta
AGRICULTURE

Adapted from
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Board (1983)

FRENCH FRIED POTATOES

20 pieces (114 g)
1300 kJ (310 Cal)



*Calculation of fat based on
35% of required kilojoules
†Calculation of carbohydrate based
on 50% of required kilojoules

CONTRIBUTION TO RECOMMENDED INTAKE...TEENAGER

(AGE 13-15 FEMALE)

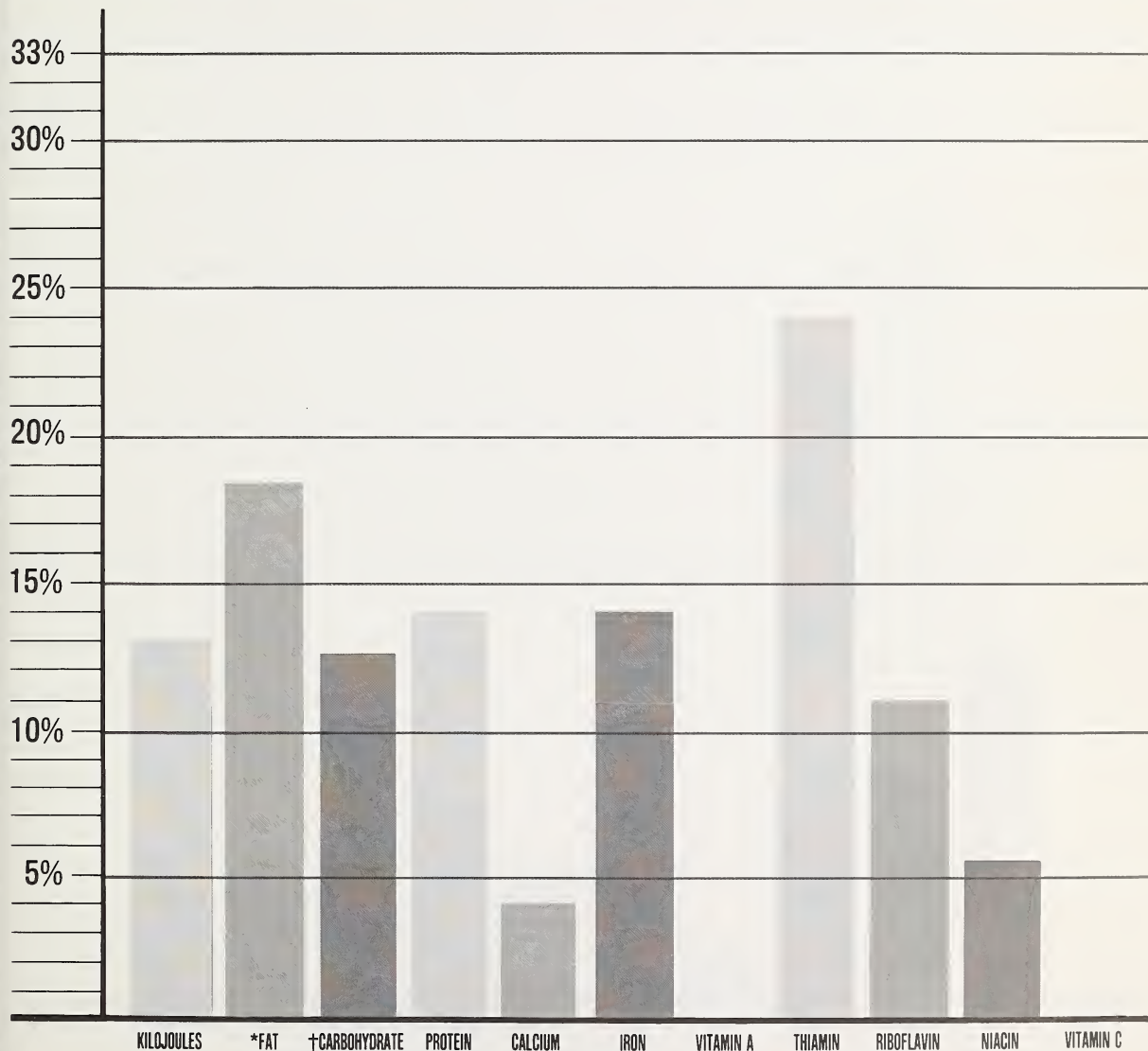
Dietary Standard
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Standards alimentaires
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Alberta
AGRICULTURE

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Board (1983)

GRANOLA

125 mL (4 oz) volume
1200 kJ (288 Cal)



*Calculation of fat based on 35% of required kilojoules

†Calculation of carbohydrate based on 50% of required kilojoules

CONTRIBUTION TO RECOMMENDED INTAKE...TEENAGER

(AGE 13-15 FEMALE)

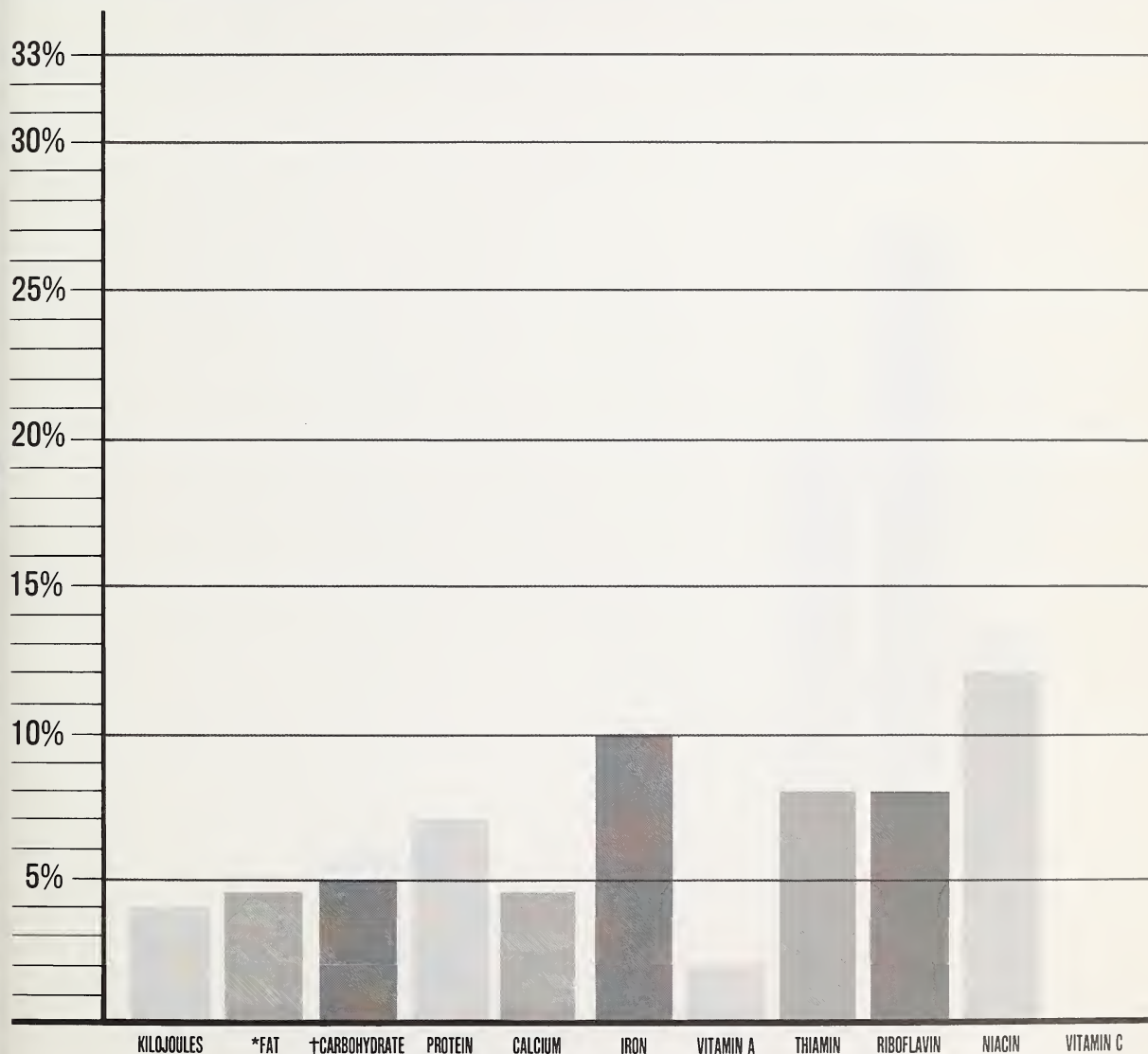
Dietary Standard for Canada (1982)
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Alberta
AGRICULTURE

Adapted from Ontario Milk Marketing Board (1983)

BRAN MUFFIN

8 cm diam. (35 g)
360 kJ (86 Cal)



CONTRIBUTION TO RECOMMENDED INTAKE...TEENAGER
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*Calculation of fat based on
35% of required kilojoules

†Calculation of carbohydrate based
on 50% of required kilojoules

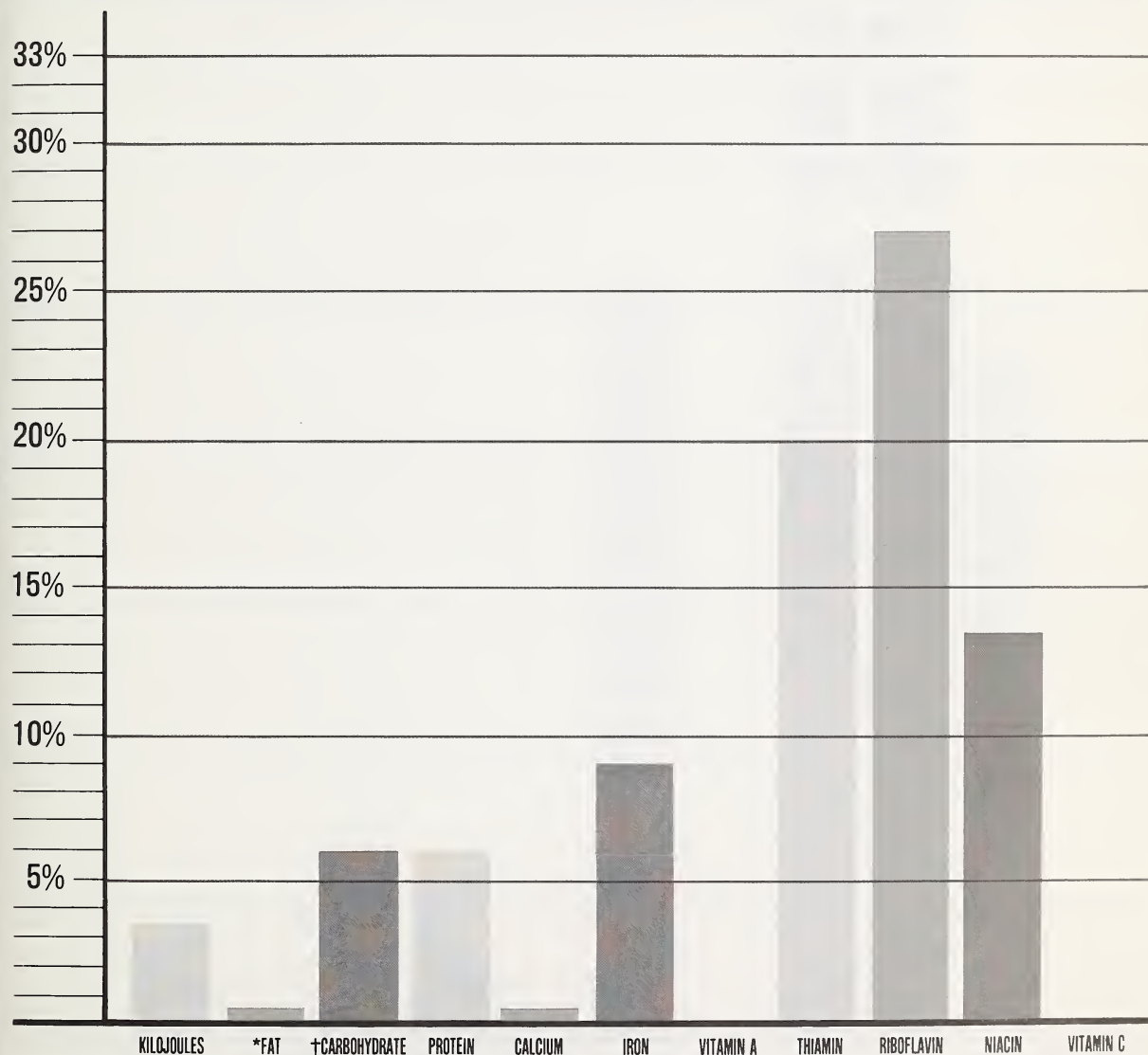
Dietary Standard
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Standards alimentaires
Canadiens (1982)

Alberta
AGRICULTURE

Adapted from
Ontario Milk Marketing
Board (1983)

SPAGHETTI

cooked
125 mL (4 oz) volume
350 kJ (82 Cal)



CONTRIBUTION TO RECOMMENDED INTAKE...TEENAGER
(AGE 13-15 FEMALE)

*Calculation of fat based on
35% of required kilojoules
†Calculation of carbohydrate based
on 50% of required kilojoules

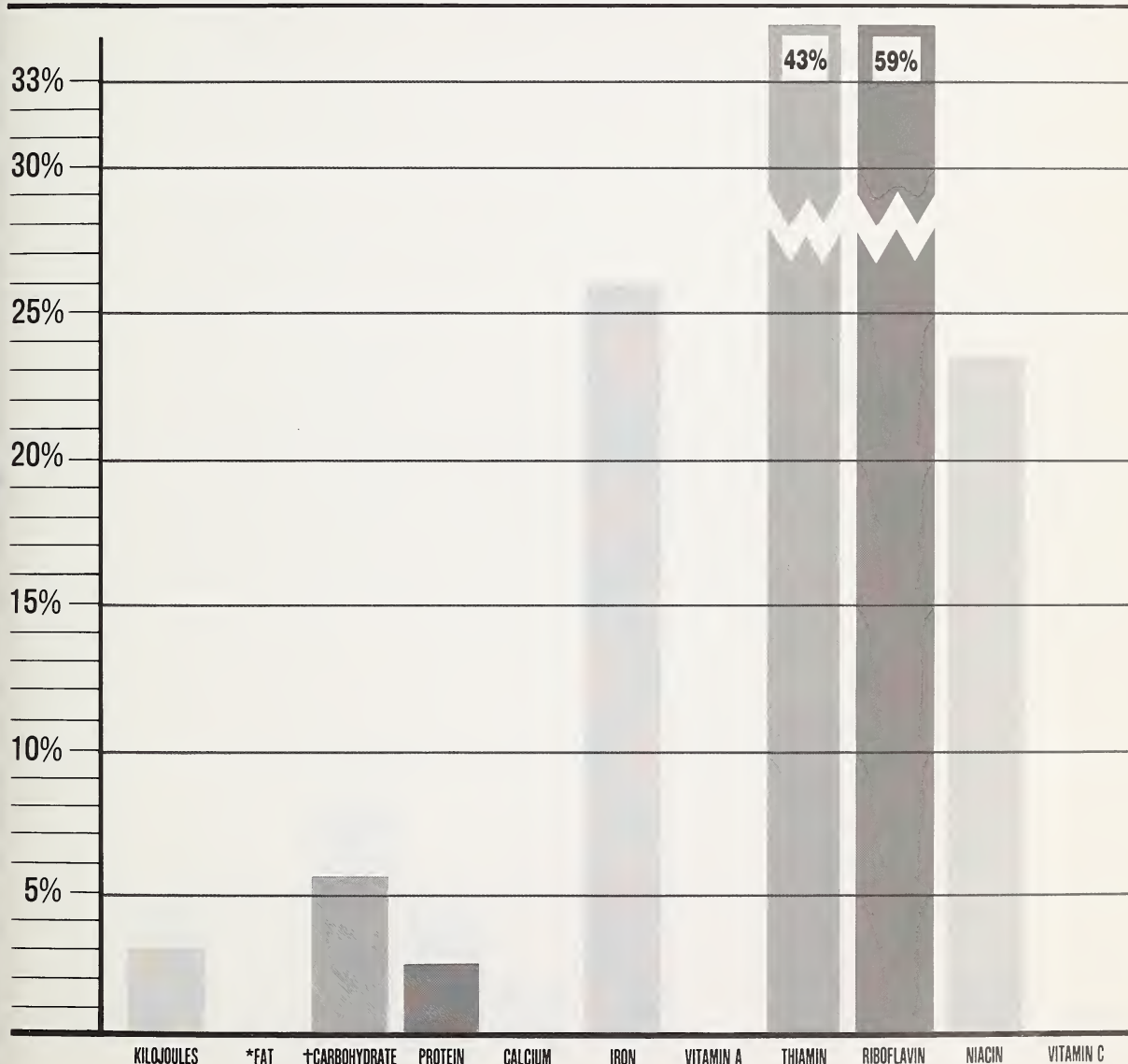
Dietary Standard
for Canada (1982)
Standards alimentaires
Canadiens (1982)

Alberta
AGRICULTURE

Adapted from
Ontario Milk Marketing
Board (1983)

CORNFLAKES

enriched
without milk
200 mL (6 oz) volume
280 kJ (67 Cal)



*Calculation of fat based on
35% of required kilojoules

†Calculation of carbohydrate based
on 50% of required kilojoules

CONTRIBUTION TO RECOMMENDED INTAKE...TEENAGER

(AGE 13-15 FEMALE)

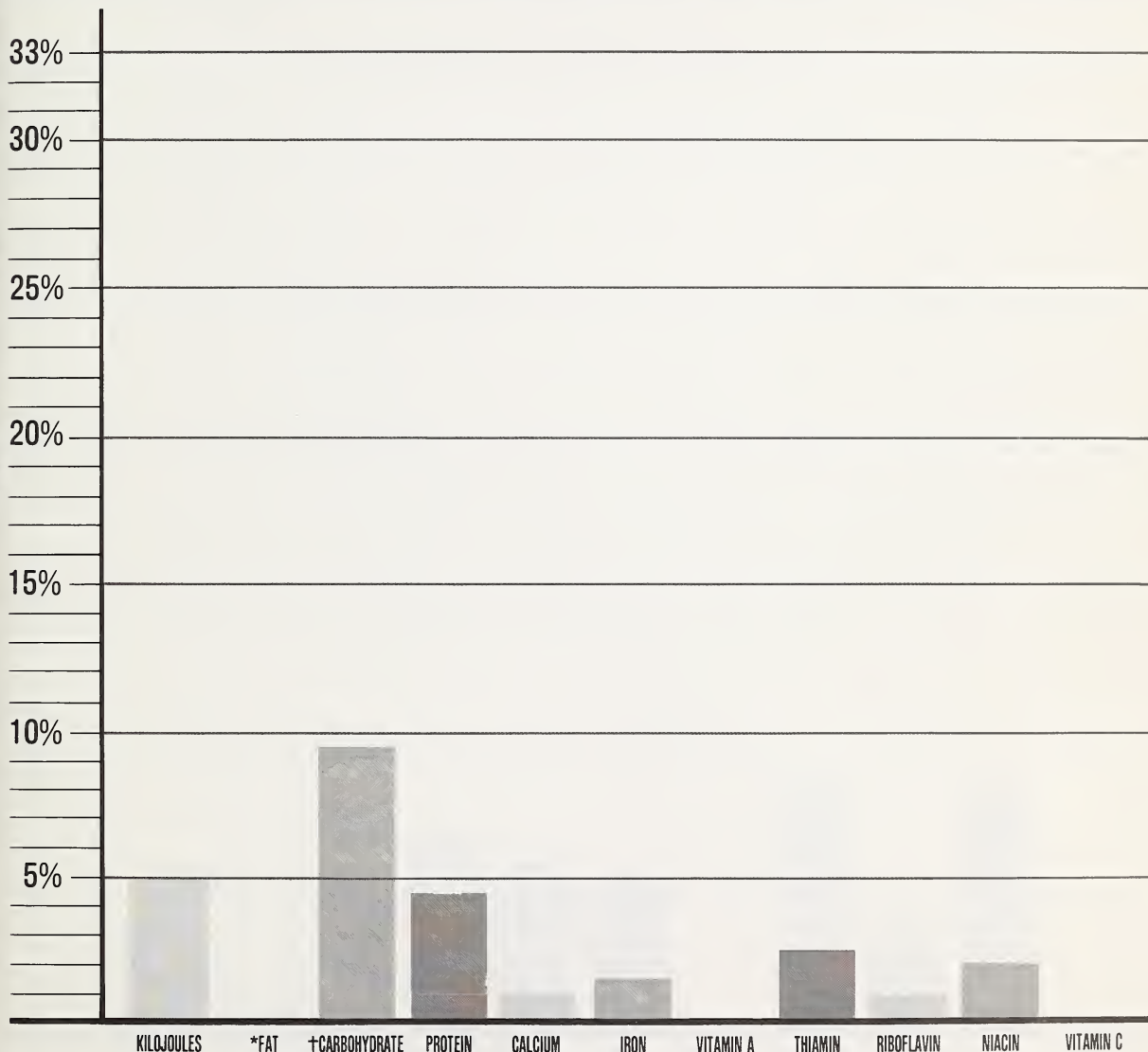
Dietary Standard
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Standards alimentaires
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Alberta
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Board (1983)

RICE, UNENRICHED

cooked
125 mL (4 oz) volume
480 kJ (113 Cal)



*Calculation of fat based on
35% of required kilojoules
†Calculation of carbohydrate based
on 50% of required kilojoules

CONTRIBUTION TO RECOMMENDED INTAKE...TEENAGER
(AGE 13-15 FEMALE)

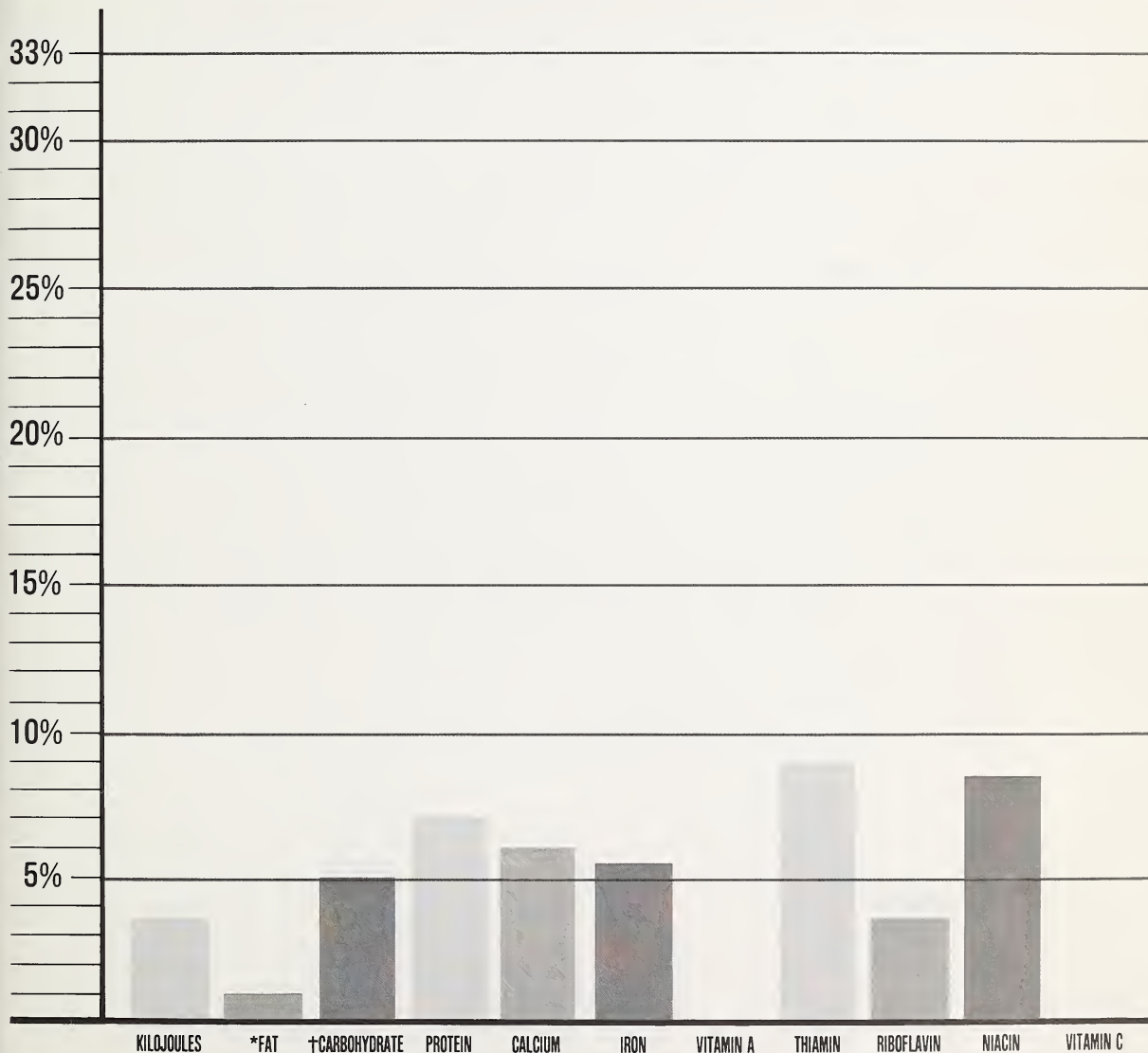
Dietary Standard
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Standards alimentaires
Canadiens (1982)

Alberta
AGRICULTURE

Adapted from
Ontario Milk Marketing
Board (1983)

WHOLE WHEAT BREAD (100%)

1 slice (30 g)
300 kJ (73 Cal)



*Calculation of fat based on
35% of required kilojoules

†Calculation of carbohydrate based
on 50% of required kilojoules

CONTRIBUTION TO RECOMMENDED INTAKE...TEENAGER

(AGE 13-15 FEMALE)

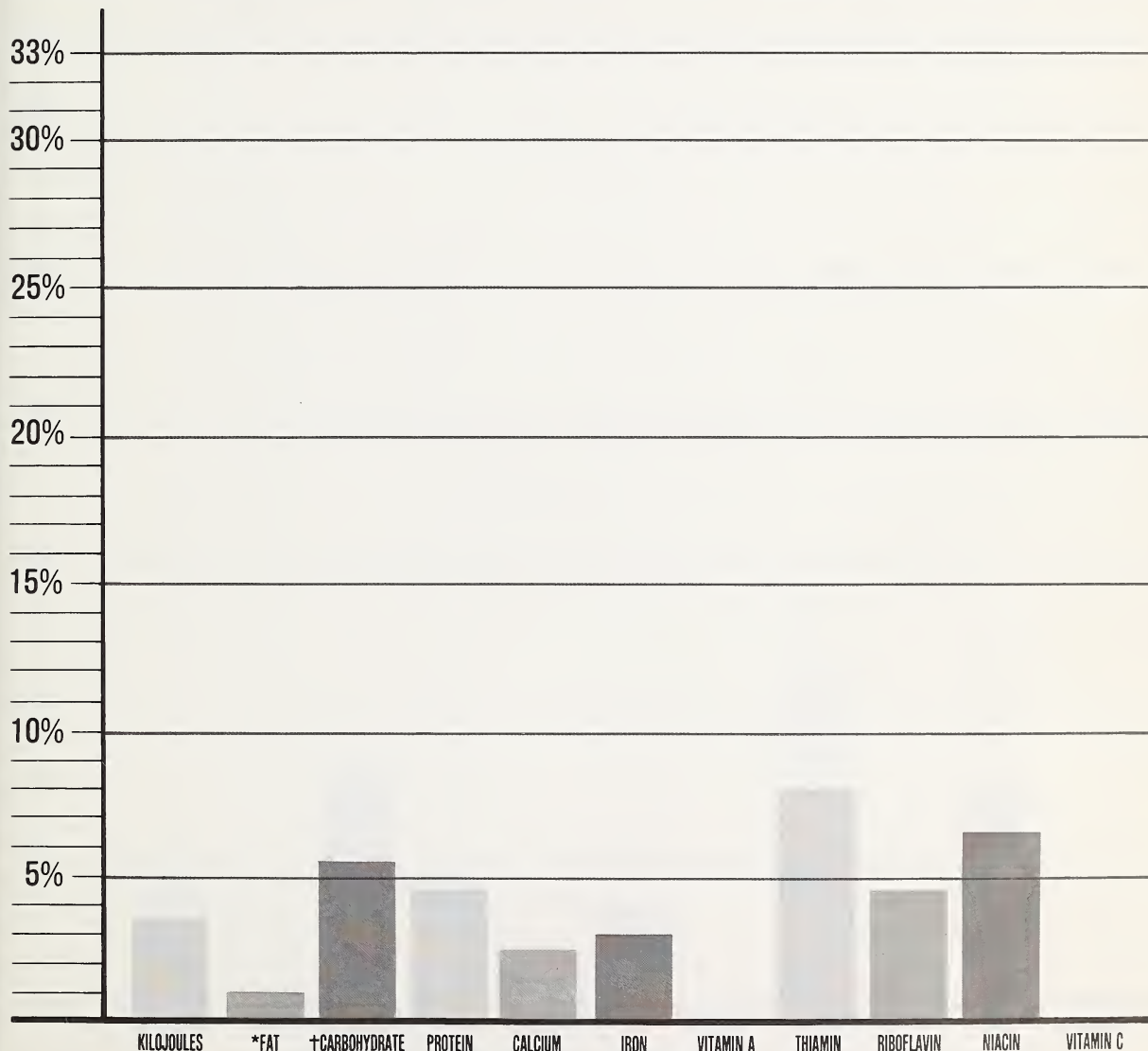
Dietary Standard
for Canada (1982)
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Canadiens (1982)

Alberta
AGRICULTURE

Adapted from
Ontario Milk Marketing
Board (1983)

WHITE BREAD

enriched
1 slice (30 g)
340 kJ (82 Cal)



CONTRIBUTION TO RECOMMENDED INTAKE...TEENAGER

(AGE 13-15 FEMALE)

*Calculation of fat based on
35% of required kilojoules

†Calculation of carbohydrate based
on 50% of required kilojoules

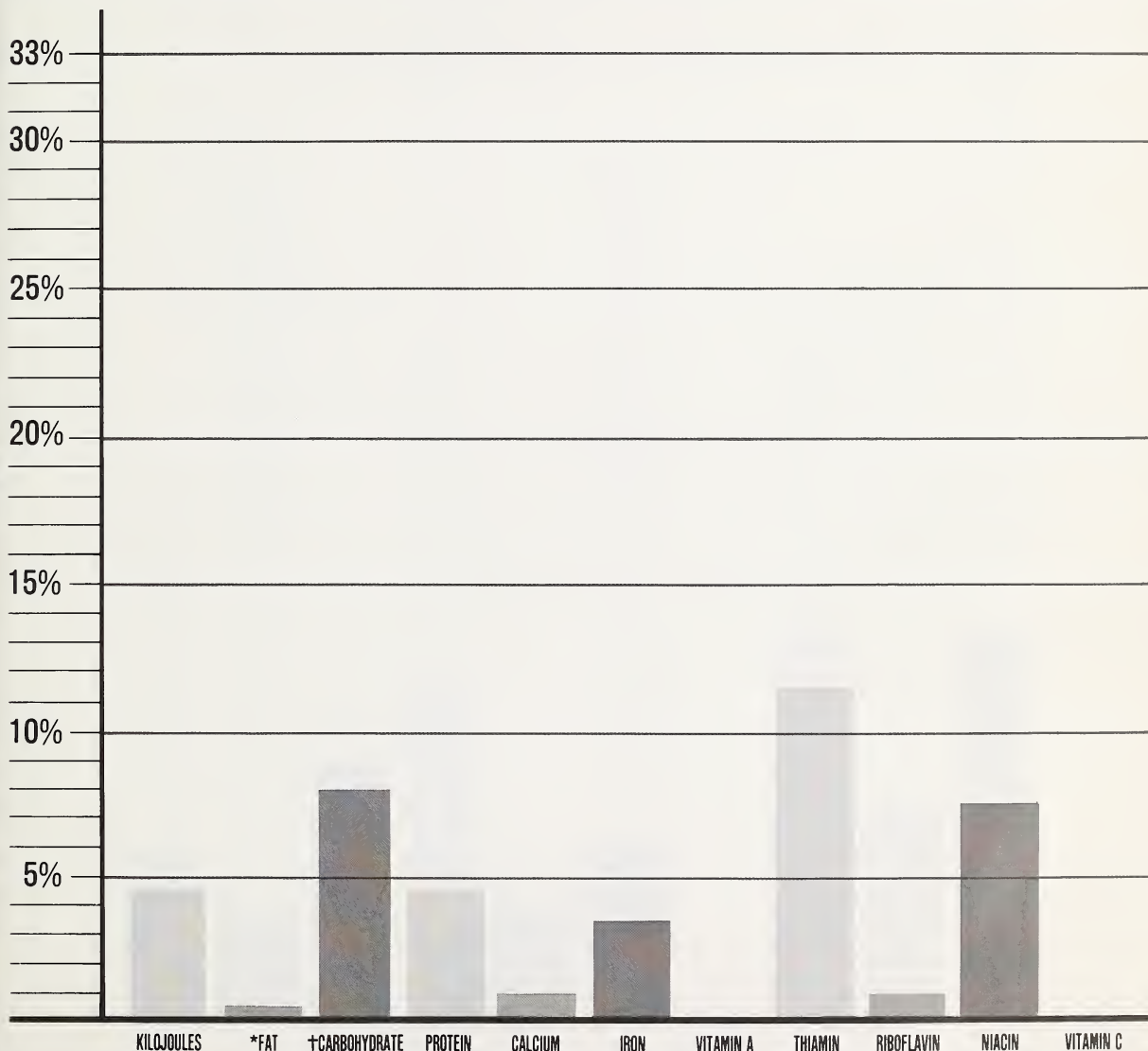
Dietary Standard
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Canadiens (1982)

Alberta
AGRICULTURE

Adapted from
Ontario Milk Marketing
Board (1983)

BROWN RICE

cooked
125 mL (4 oz) volume
440 kJ (105 Cal)



*Calculation of fat based on
35% of required kilojoules
†Calculation of carbohydrate based
on 50% of required kilojoules

CONTRIBUTION TO RECOMMENDED INTAKE...TEENAGER
(AGE 13-15 FEMALE)

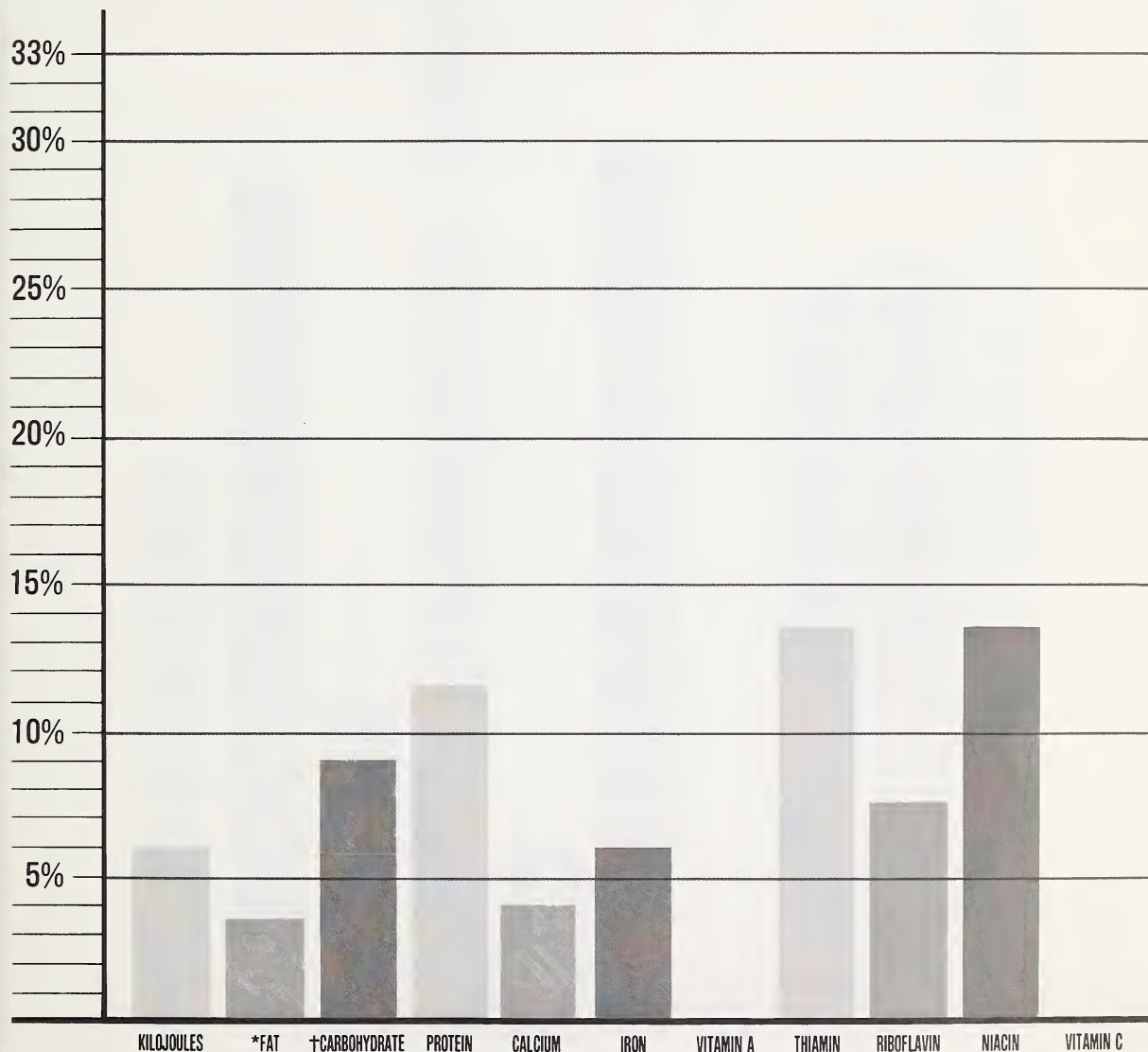
Dietary Standard
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Alberta
AGRICULTURE

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HOTDOG BUN

1 bun (50 g)
570 kJ (137 Cal)



CONTRIBUTION TO RECOMMENDED INTAKE...TEENAGER

(AGE 13-15 FEMALE)

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on 50% of required kilojoules

Dietary Standard
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Board (1983)

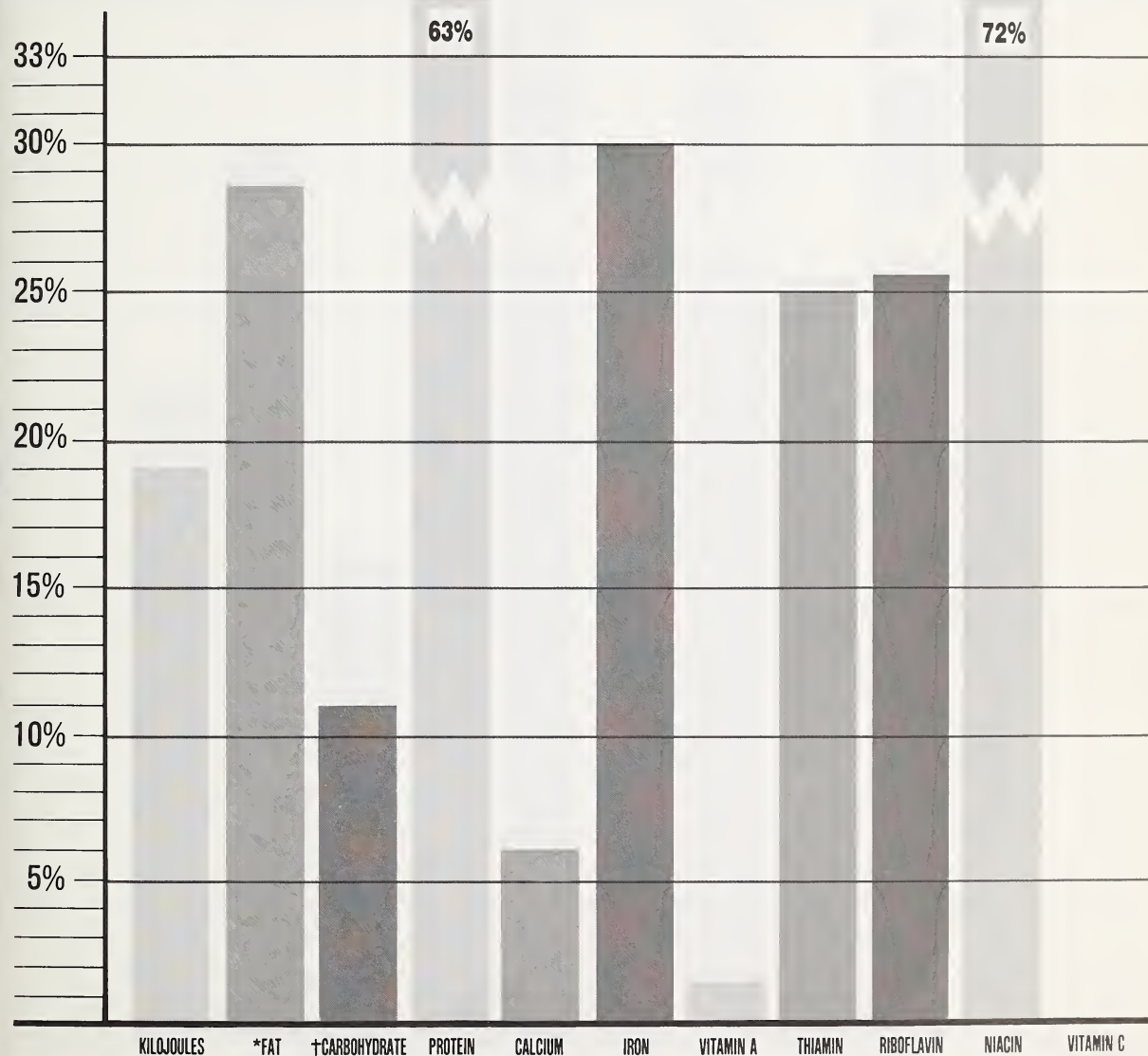
HAMBURGER

bun and patty

1 bun (60 g)

1 patty (90 g ground beef, 20% fat)

1770 kJ (421 Cal)



*Calculation of fat based on 35% of required kilojoules

†Calculation of carbohydrate based on 50% of required kilojoules

CONTRIBUTION TO RECOMMENDED INTAKE...TEENAGER

(AGE 13-15 FEMALE)

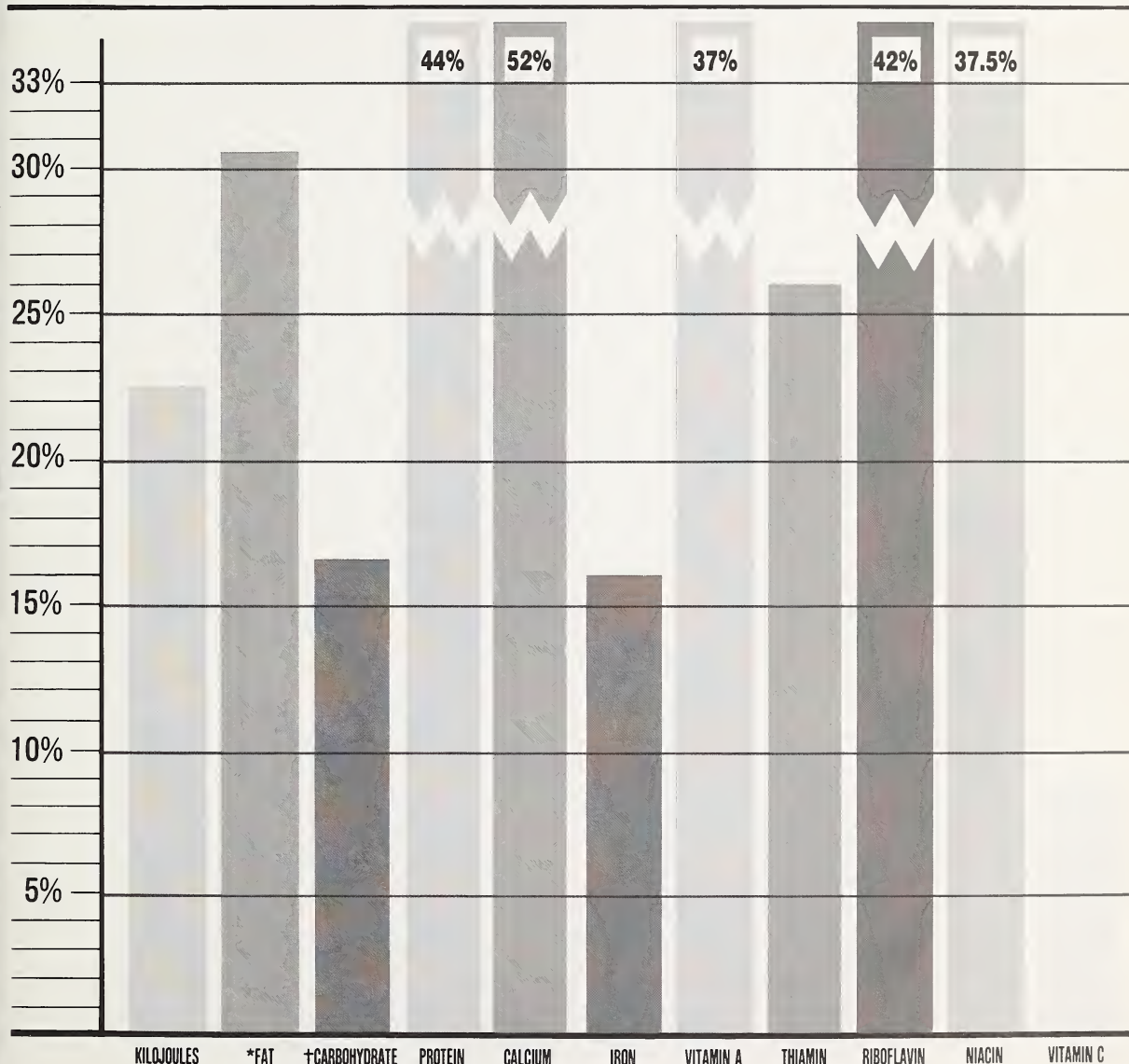
Dietary Standard for Canada (1982)
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Adapted from Ontario Milk Marketing Board (1983)

MACARONI AND CHEESE

baked
250 mL (8 oz) volume
2080 kJ (497 Cal)



*Calculation of fat based on 35% of required kilojoules

†Calculation of carbohydrate based on 50% of required kilojoules

CONTRIBUTION TO RECOMMENDED INTAKE...TEENAGER

(AGE 13-15 FEMALE)

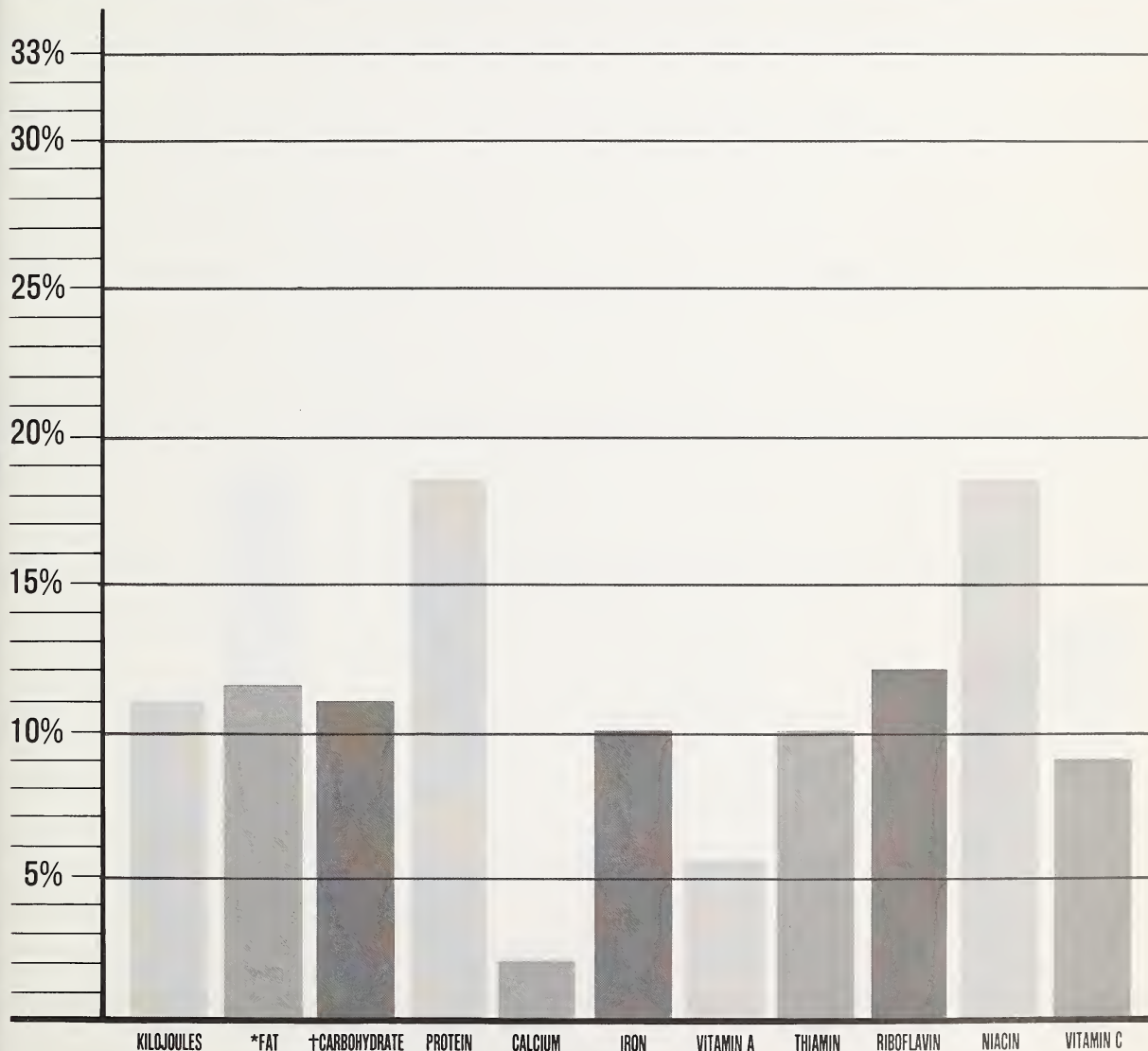
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PIZZA WITH SAUSAGE

1/8 of 35 cm diam. pie, 1 sector
1030 kJ (246 Cal)



*Calculation of fat based on
35% of required kilojoules

†Calculation of carbohydrate based
on 50% of required kilojoules

CONTRIBUTION TO RECOMMENDED INTAKE...TEENAGER

(AGE 13-15 FEMALE)

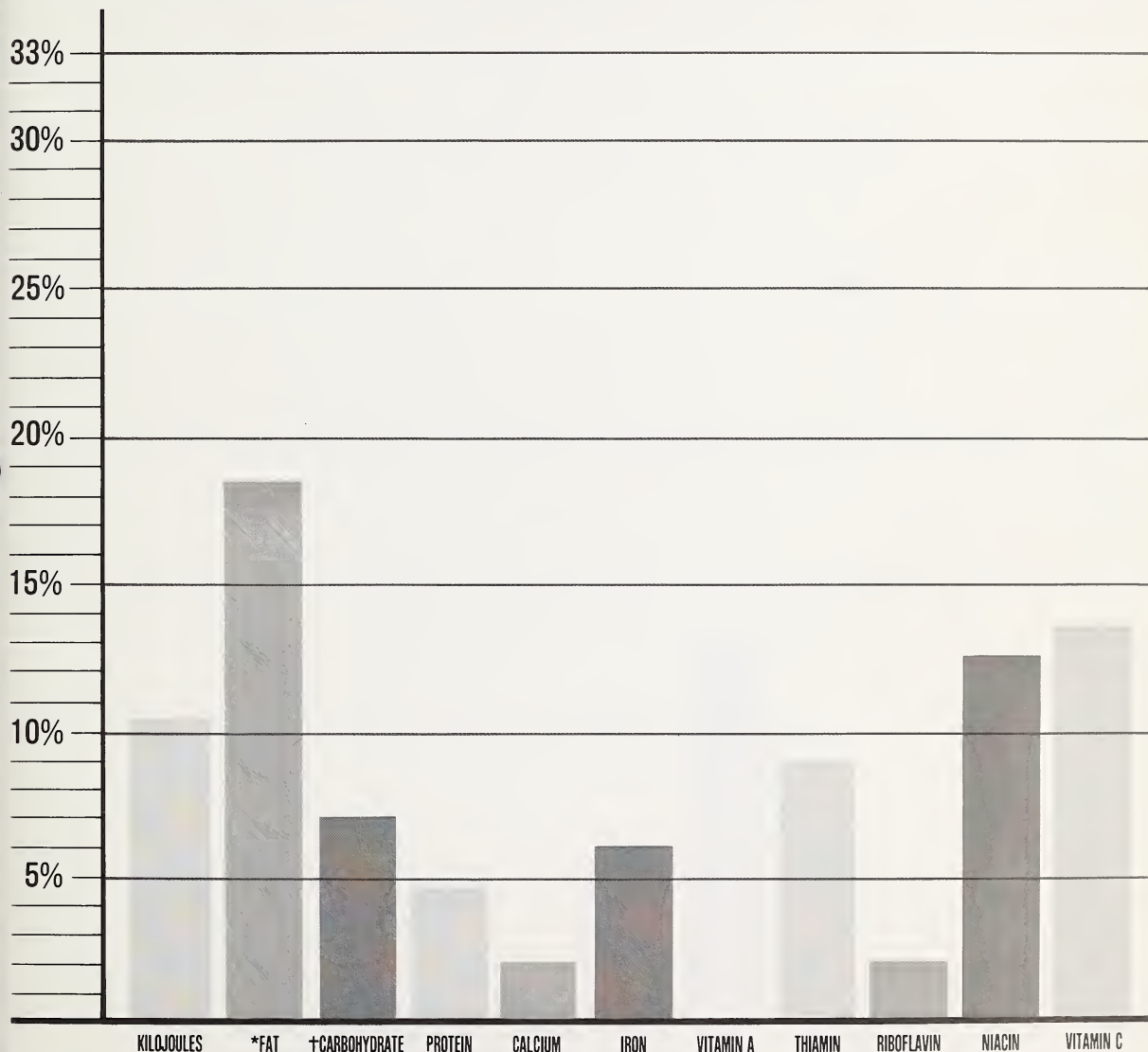
Dietary Standard
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Alberta
AGRICULTURE

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POTATO CHIPS

20 chips (40 g)
960 kJ (230 Cal)



*Calculation of fat based on 35% of required kilojoules

†Calculation of carbohydrate based on 50% of required kilojoules

CONTRIBUTION TO RECOMMENDED INTAKE...TEENAGER

(AGE 13-15 FEMALE)

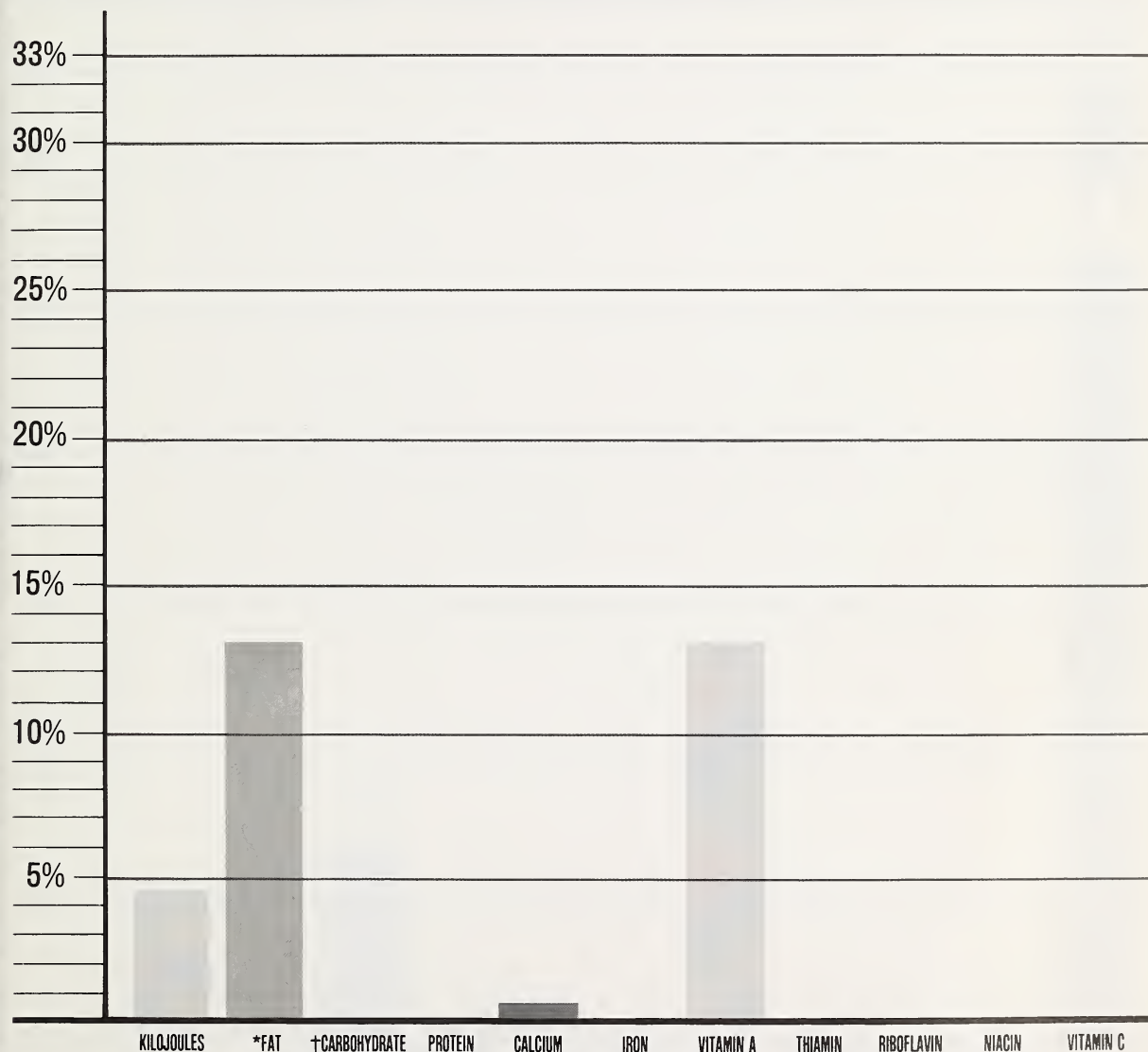
Dietary Standard for Canada (1982)
Standards alimentaires Canadiens (1982)

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Adapted from Ontario Milk Marketing Board (1983)

BUTTER

15 mL (1 tbsp)
420 kJ (100 Cal)



CONTRIBUTION TO RECOMMENDED INTAKE...TEENAGER
(AGE 13-15 FEMALE)

*Calculation of fat based on
35% of required kilojoules
†Calculation of carbohydrate based
on 50% of required kilojoules

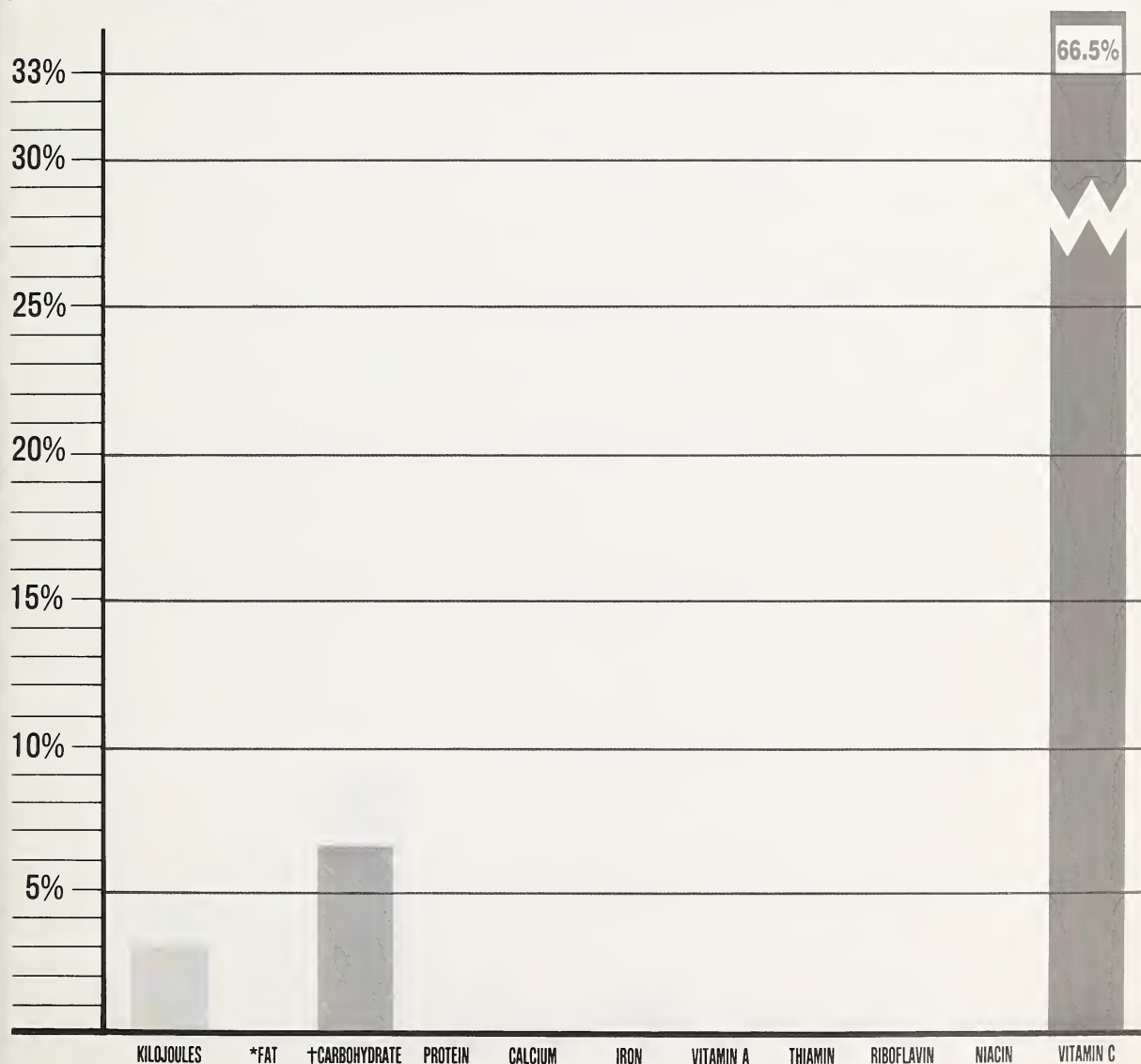
Dietary Standard
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Alberta
AGRICULTURE

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Board (1983)

ORANGE FLAVOURED DRINK

crystals
125 mL (4 oz) volume
300 kJ (72 Cal)



*Calculation of fat based on
35% of required kilojoules

†Calculation of carbohydrate based
on 50% of required kilojoules

CONTRIBUTION TO RECOMMENDED INTAKE...TEENAGER

(AGE 13-15 FEMALE)

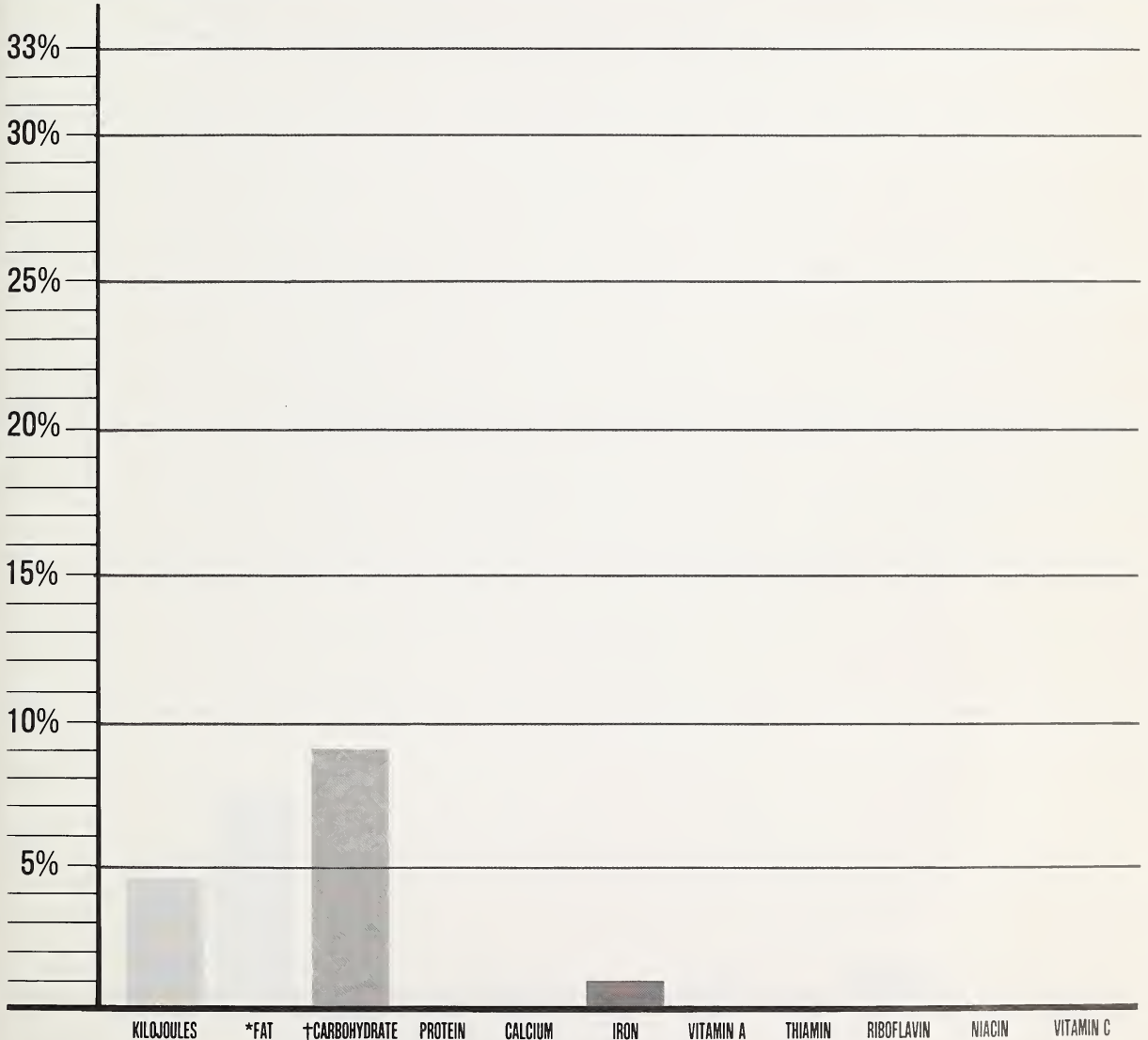
Dietary Standard
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Alberta
AGRICULTURE

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Board (1983)

GUM DROPS

24 small (30 g)
420 kJ (100 Cal)



*Calculation of fat based on
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†Calculation of carbohydrate based
on 50% of required kilojoules

CONTRIBUTION TO RECOMMENDED INTAKE...TEENAGER
(AGE 13-15 FEMALE)

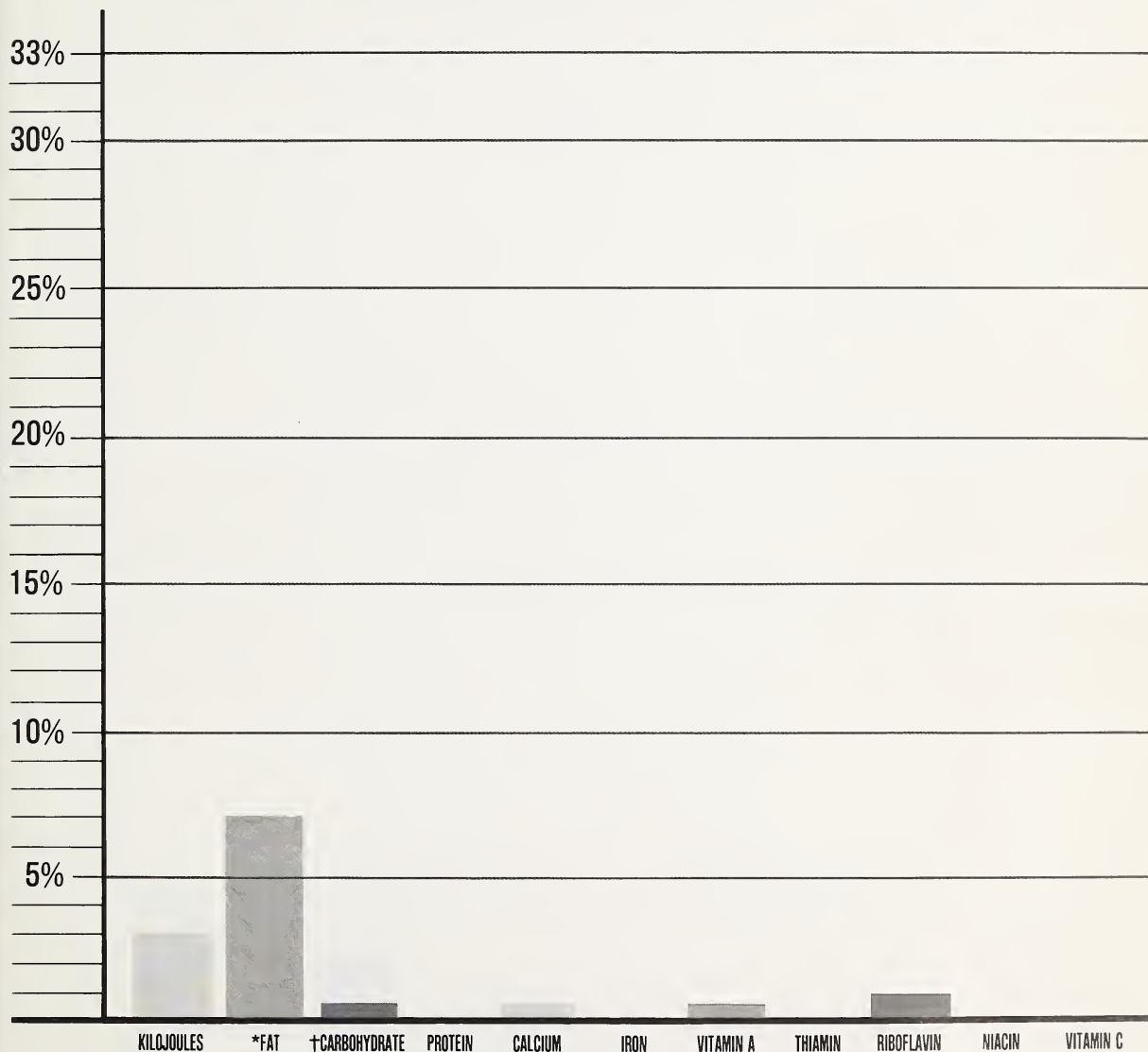
Dietary Standard
for Canada (1982)
Standards alimentaires
Canadiens (1982)

Alberta
AGRICULTURE

Adapted from
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Board (1983)

SALAD DRESSING

french
15 mL (1 tbsp)
270 kJ (65 Cal)



CONTRIBUTION TO RECOMMENDED INTAKE...TEENAGER
(AGE 13-15 FEMALE)

*Calculation of fat based on
35% of required kilojoules
†Calculation of carbohydrate based
on 50% of required kilojoules

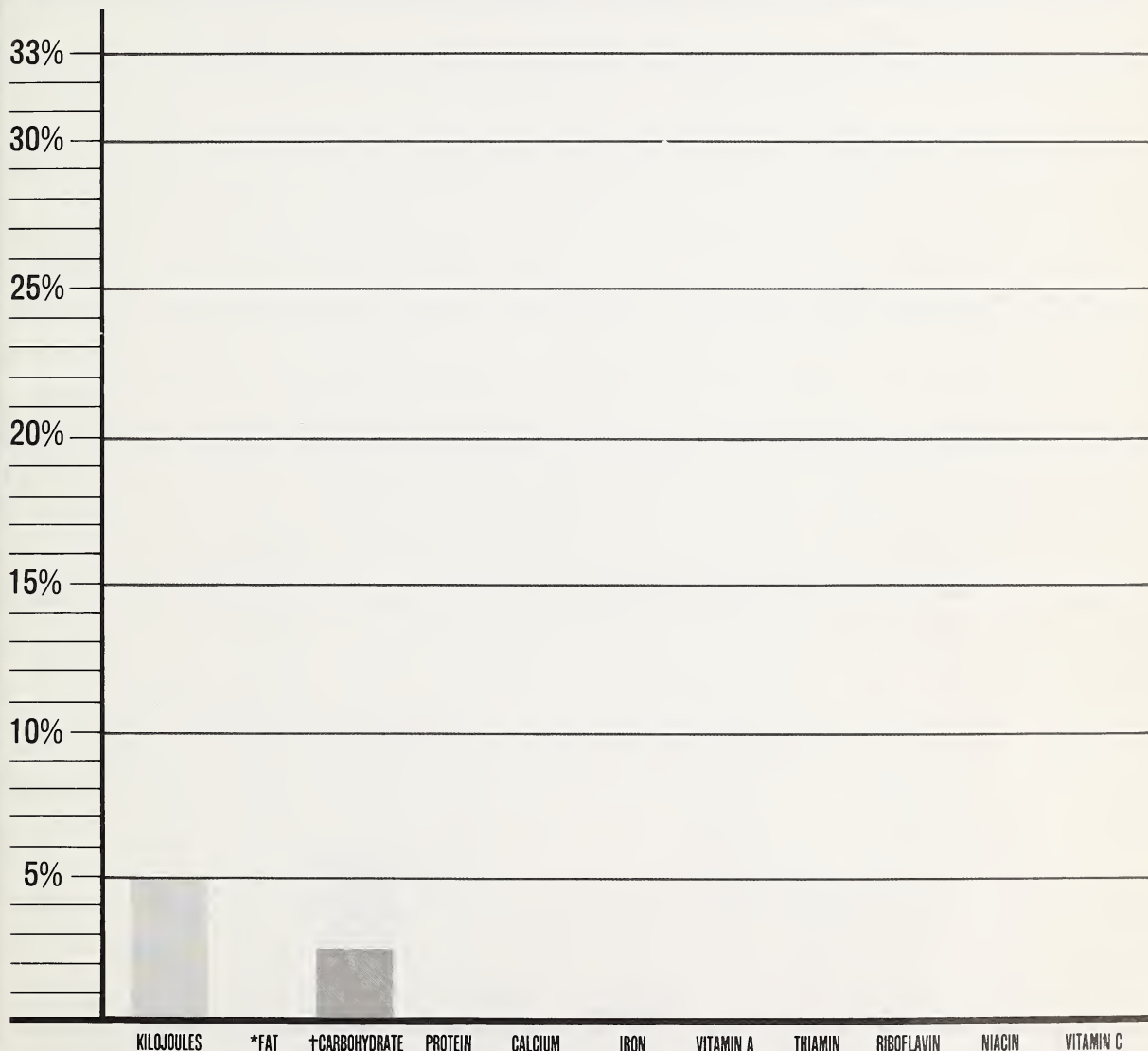
Dietary Standard
for Canada (1982)
Standards alimentaires
Canadiens (1982)

Alberta
AGRICULTURE

Adapted from
Ontario Milk Marketing
Board (1983)

COLA

284 mL (10 oz) volume
450 kJ (109 Cal)



*Calculation of fat based on
35% of required kilojoules
†Calculation of carbohydrate based
on 50% of required kilojoules

CONTRIBUTION TO RECOMMENDED INTAKE...TEENAGER
(AGE 13-15 FEMALE)

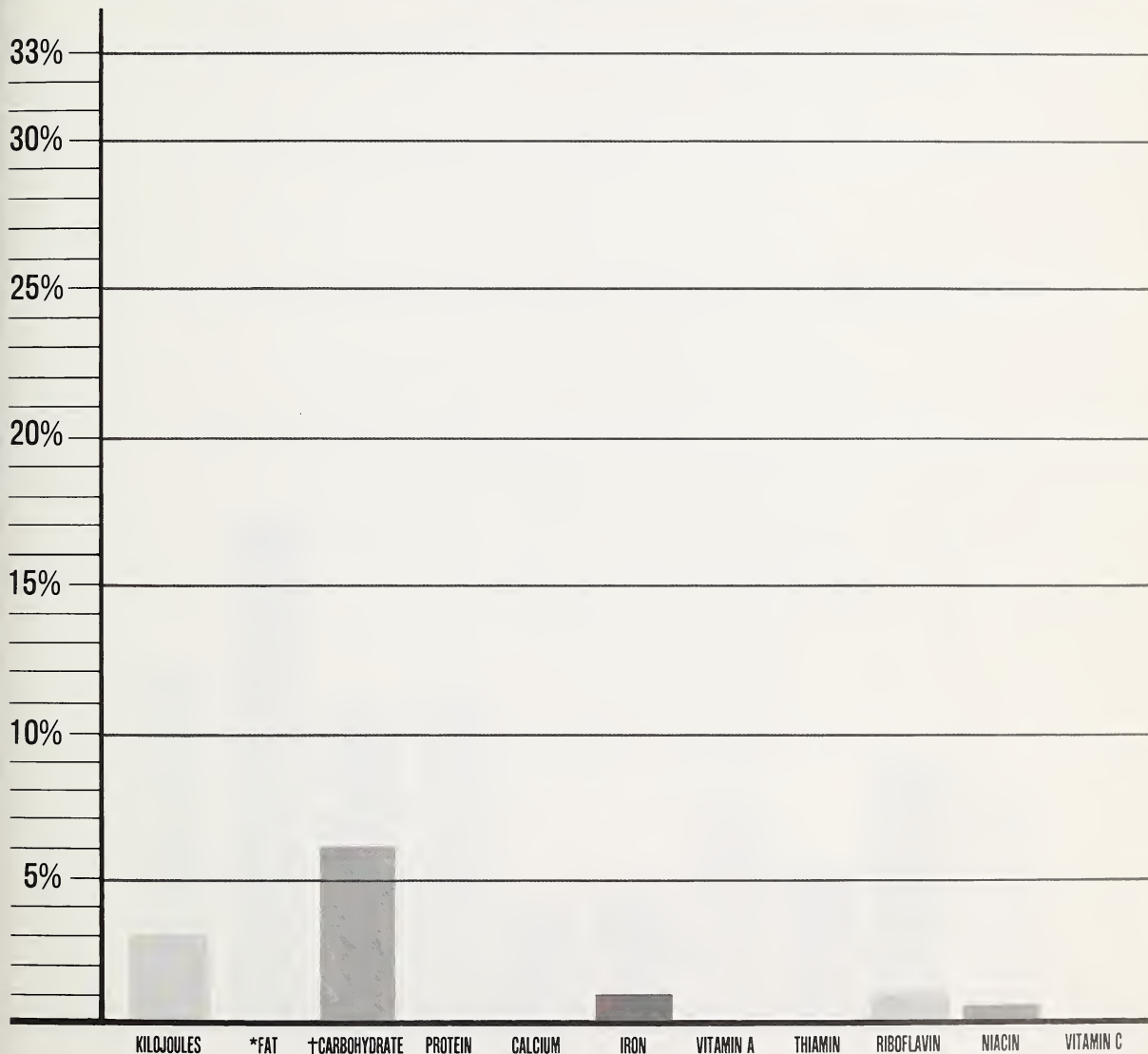
Dietary Standard
for Canada (1982)
Standards alimentaires
Canadiens (1982)

Alberta
AGRICULTURE

Adapted from
Ontario Milk Marketing
Board (1983)

HONEY

15 mL (1 tbsp)
270 kJ (65 Cal)



*Calculation of fat based on
35% of required kilojoules
†Calculation of carbohydrate based
on 50% of required kilojoules

CONTRIBUTION TO RECOMMENDED INTAKE...TEENAGER

(AGE 13-15 FEMALE)

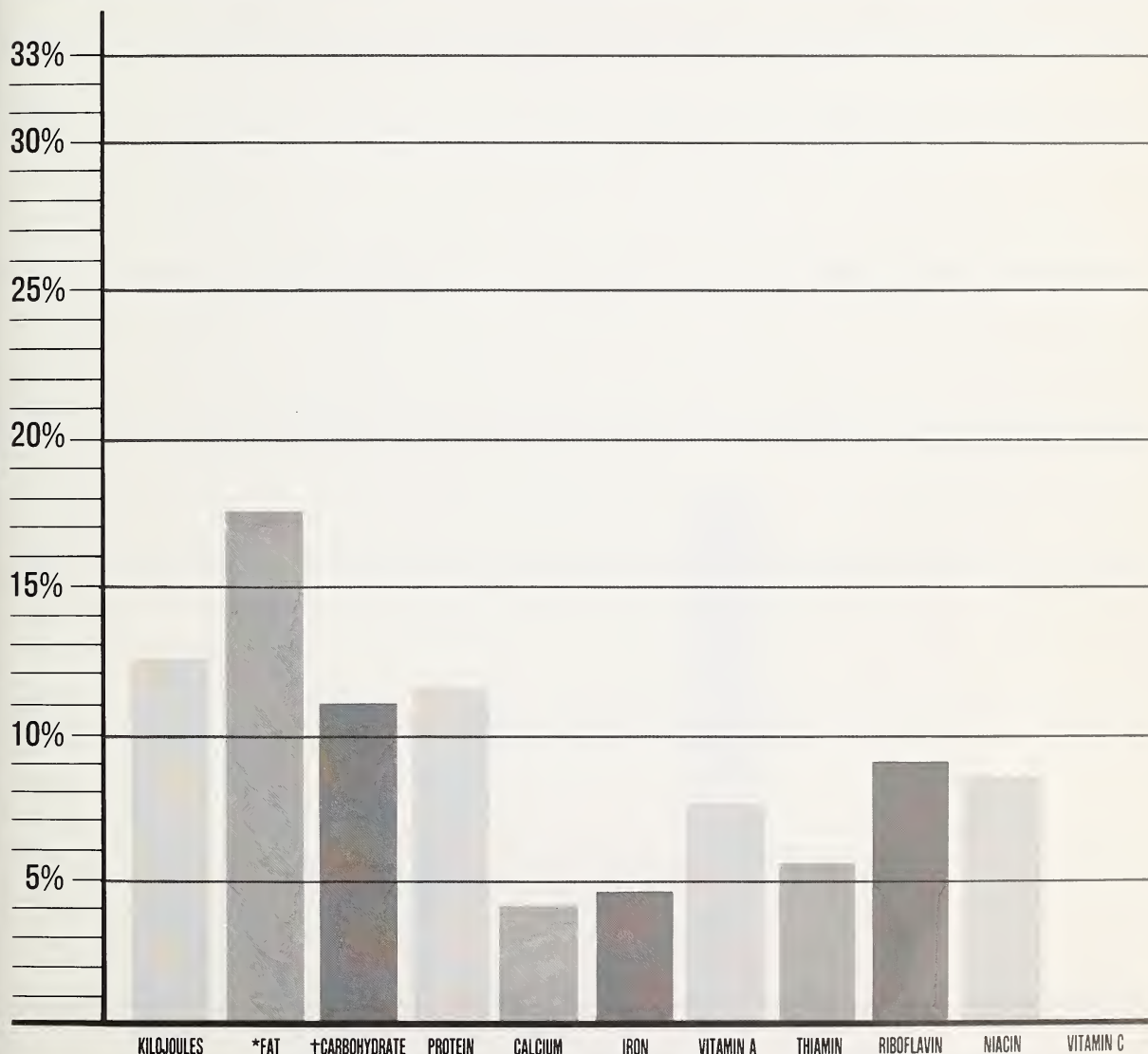
Dietary Standard
for Canada (1982)
Standards alimentaires
Canadiens (1982)

Alberta
AGRICULTURE

Adapted from
Ontario Milk Marketing
Board (1983)

DANISH PASTRY

plain, round, 11 cm diam. x 2½ cm
1 danish (65 g)
1150 kJ (275 Cal)



*Calculation of fat based on 35% of required kilojoules

†Calculation of carbohydrate based on 50% of required kilojoules

CONTRIBUTION TO RECOMMENDED INTAKE...TEENAGER

(AGE 13-15 FEMALE)

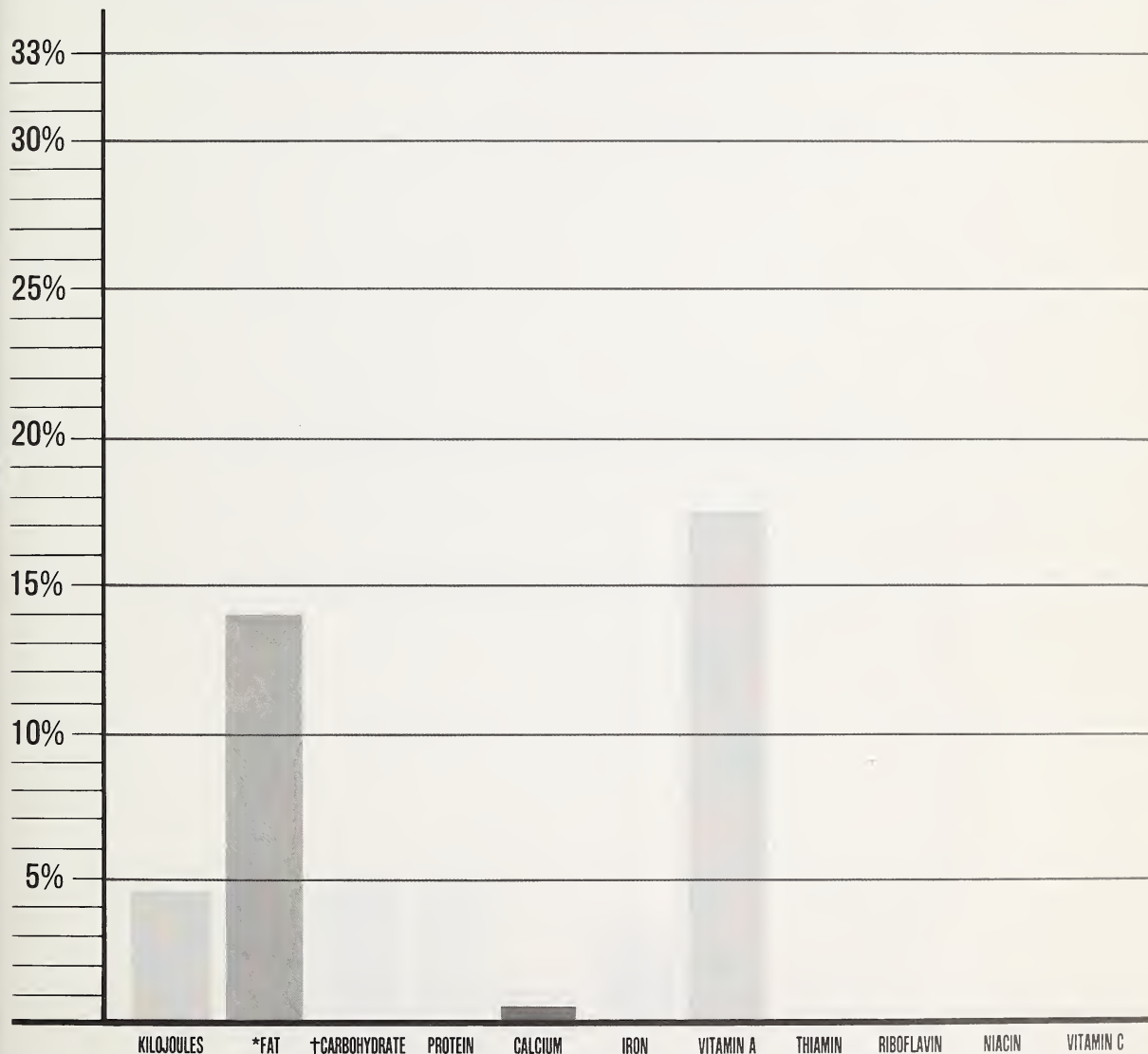
Dietary Standard
for Canada (1982)
Standards alimentaires
Canadiens (1982)

Alberta
AGRICULTURE

Adapted from
Ontario Milk Marketing
Board (1983)

MARGARINE

15 mL (1 tbsp)
420 kJ (100 Cal)



CONTRIBUTION TO RECOMMENDED INTAKE...TEENAGER
(AGE 13-15 FEMALE)

*Calculation of fat based on
35% of required kilojoules
†Calculation of carbohydrate based
on 50% of required kilojoules

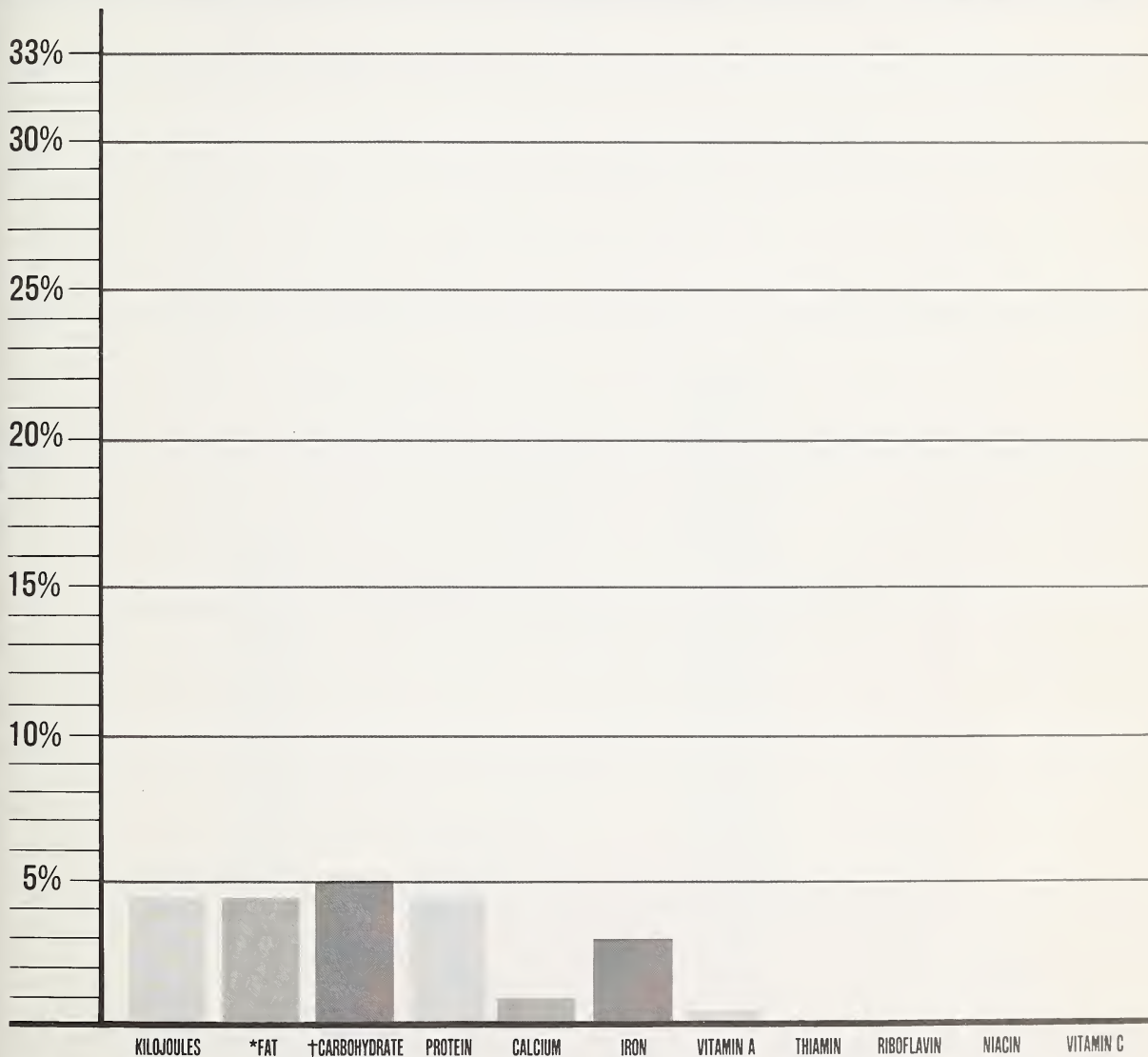
Dietary Standard
for Canada (1982)
Standards alimentaires
Canadiens (1982)

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AGRICULTURE

Adapted from
Ontario Milk Marketing
Board (1983)

CHOCOLATE CHIP COOKIES

commercial
2 cookies
420 kJ (100 Cal)



CONTRIBUTION TO RECOMMENDED INTAKE...TEENAGER
(AGE 13-15 FEMALE)

*Calculation of fat based on
35% of required kilojoules
†Calculation of carbohydrate based
on 50% of required kilojoules

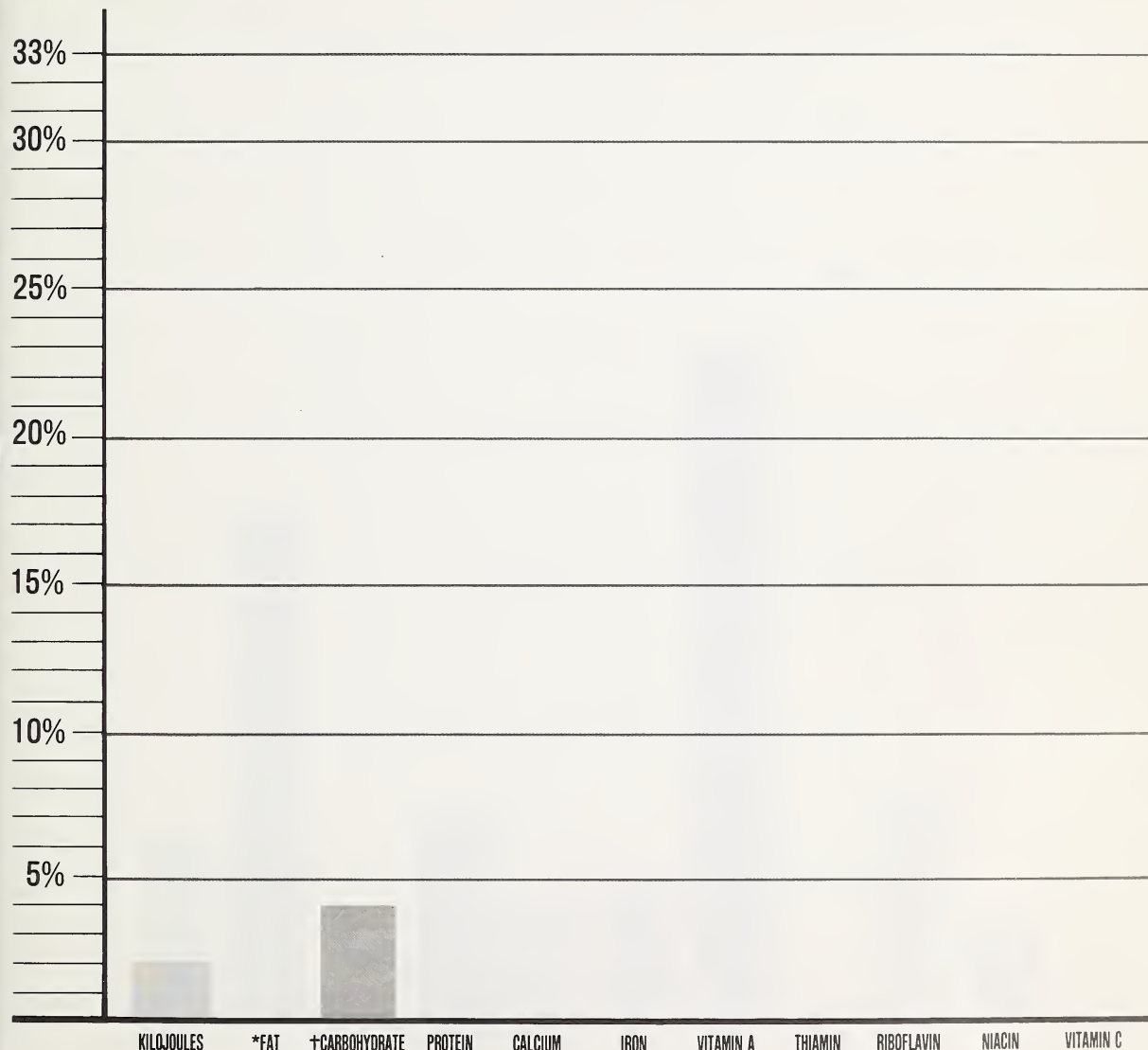
Dietary Standard
for Canada (1982)
Standards alimentaires
Canadiens (1982)

Alberta
AGRICULTURE

Adapted from
Ontario Milk Marketing
Board (1983)

SUGAR

white
15 mL (1 tbsp)
170 kJ (40 Cal)



*Calculation of fat based on
35% of required kilojoules
†Calculation of carbohydrate based
on 50% of required kilojoules

CONTRIBUTION TO RECOMMENDED INTAKE...TEENAGER
(AGE 13-15 FEMALE)

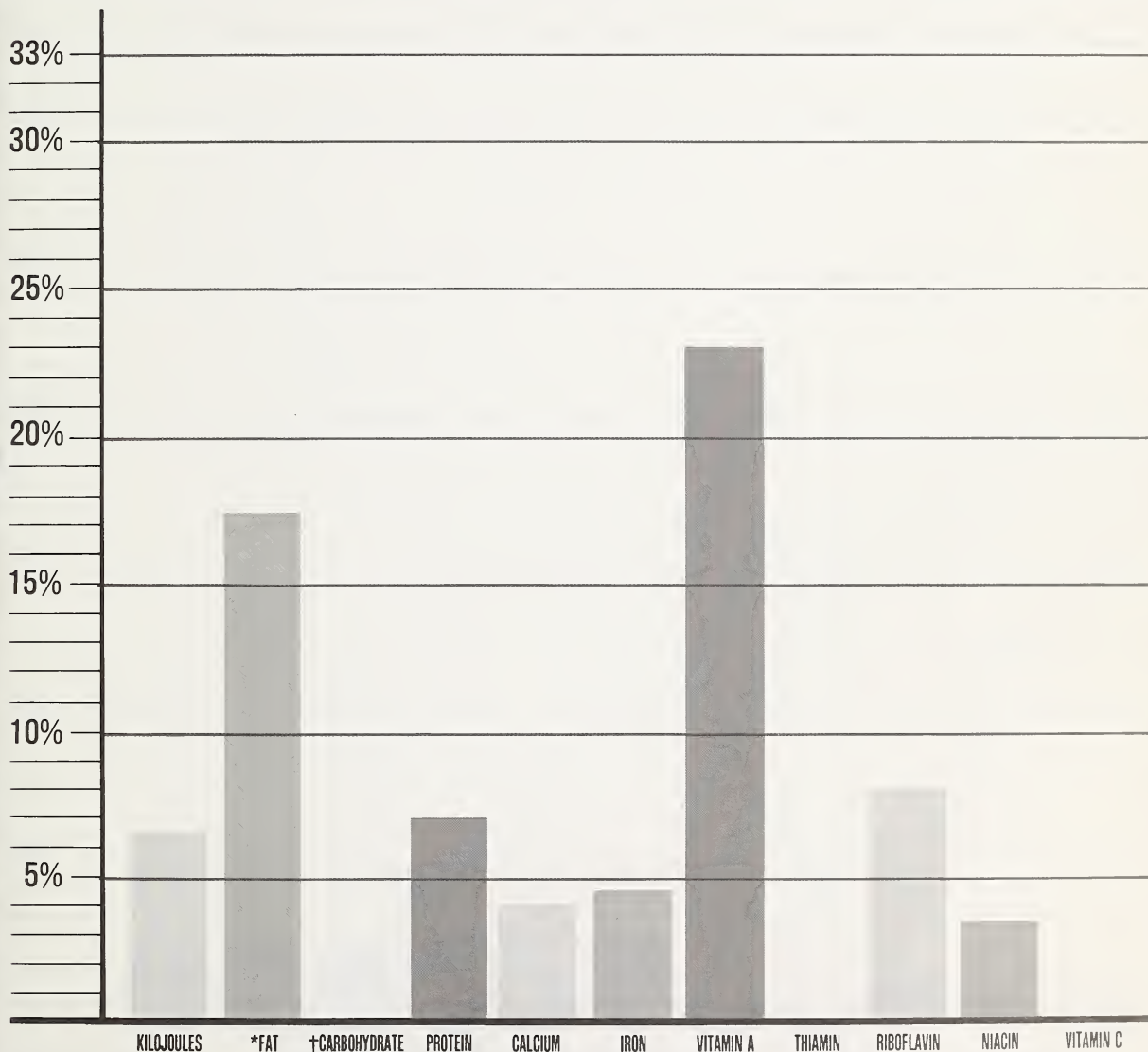
Dietary Standard
for Canada (1982)
Standards alimentaires
Canadiens (1982)

Alberta
AGRICULTURE

Adapted from
Ontario Milk Marketing
Board (1983)

CREAM CHEESE

45 mL (48 g)
600 kJ (147 Cal)



*Calculation of fat based on
35% of required kilojoules

†Calculation of carbohydrate based
on 50% of required kilojoules

CONTRIBUTION TO RECOMMENDED INTAKE...TEENAGER
(AGE 13-15 FEMALE)

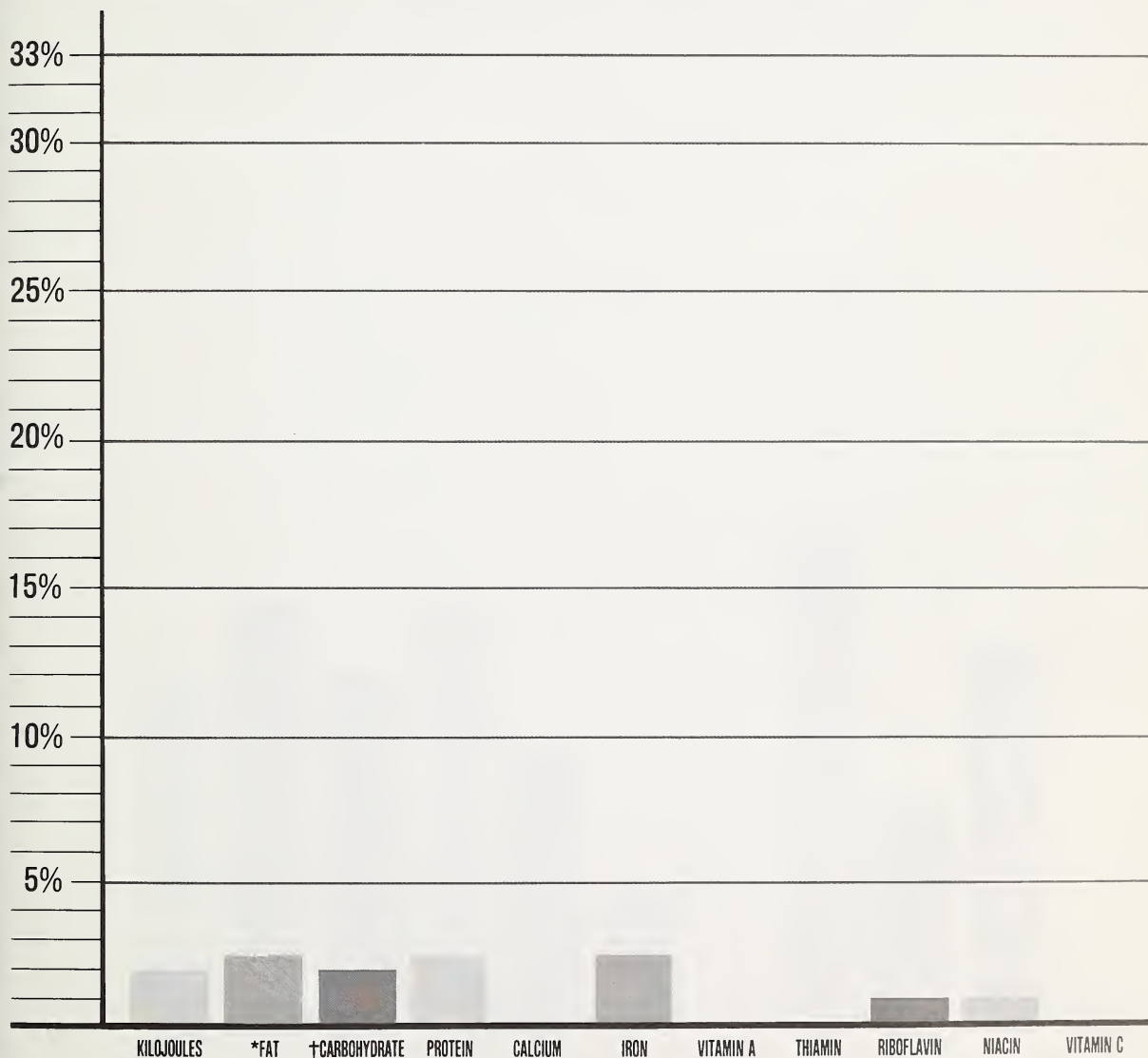
Dietary Standard
for Canada (1982)
Standards alimentaires
Canadiens (1982)

Alberta
AGRICULTURE

Adapted from
Ontario Milk Marketing
Board (1983)

POPCORN

with oil and salt
250 mL (8 oz)
170 kJ (40 Cal)



*Calculation of fat based on
35% of required kilojoules

†Calculation of carbohydrate based
on 50% of required kilojoules

CONTRIBUTION TO RECOMMENDED INTAKE...TEENAGER
(AGE 13-15 FEMALE)

Dietary Standard
for Canada (1982)
Standards alimentaires
Canadiens (1982)

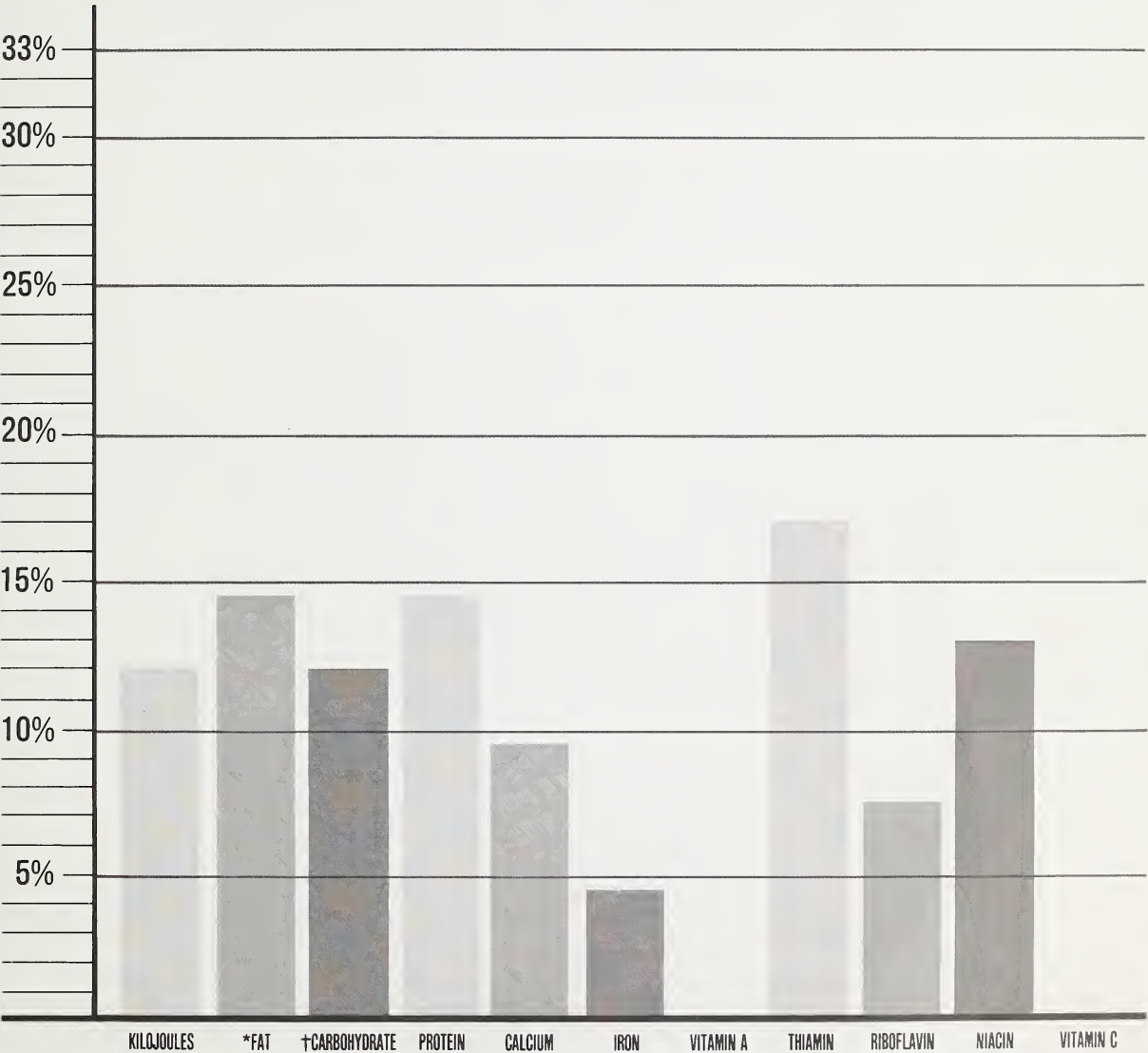
Alberta
AGRICULTURE

Adapted from
Ontario Milk Marketing
Board (1983)



CHOCOLATE BAR

"Oh Henry"
1 bar (62 g)
1130 kJ (269 Cal)

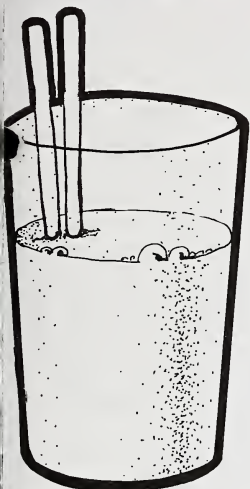


*Calculation of fat based on 35% of required kilojoules
†Calculation of carbohydrate based on 50% of required kilojoules

CONTRIBUTION TO RECOMMENDED INTAKE...TEENAGER
(AGE 13-15 FEMALE)

Dietary Standard for Canada (1982)
Standards alimentaires Canadiens (1982)

milk Products



Strawberry
Milk Shake



Cheese



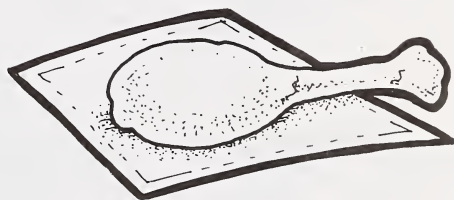
Caramel Pudding

Ice Cream

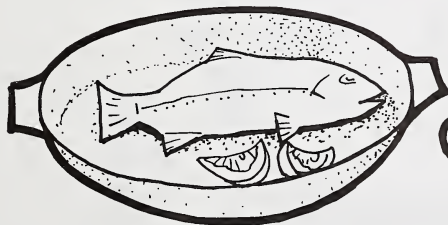


meat and Alternatives

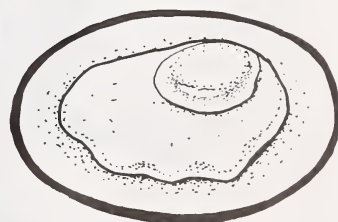
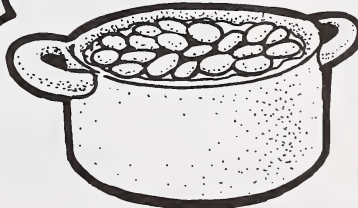
Chicken



Fish



Beans



Fried
Egg



Peanuts

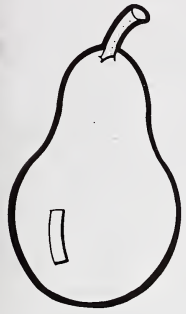


soft-Boiled
Egg

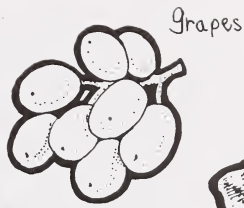
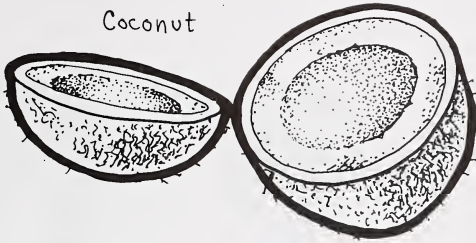


Steak

Vegetables and Fruit



Coconut



Grapes

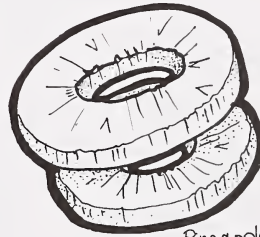
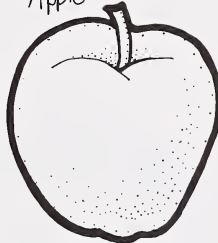


Prune

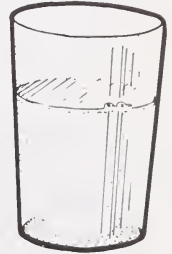


Kiwi Fruit

Apple



Pineapple



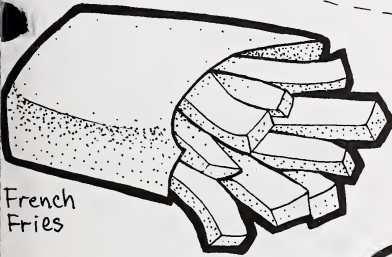
Orange Juice



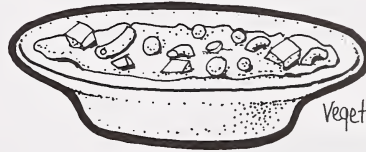
Melon



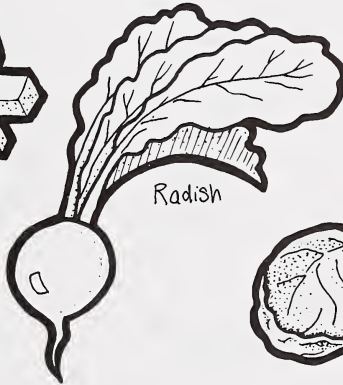
Banana



French Fries



Vegetable Soup



Radish



Brussels Sprouts



Lettuce



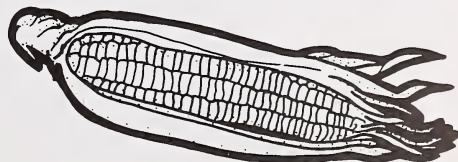
Cabbage



Carrot



Celery



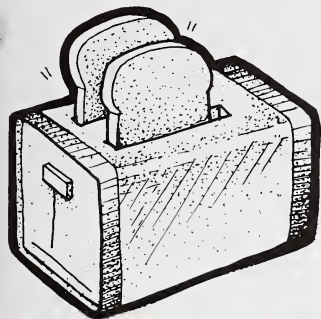
Corn



Peas

Grain Products

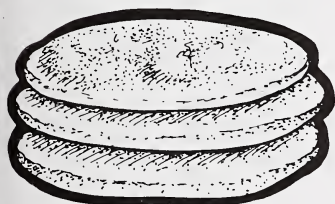
Toast



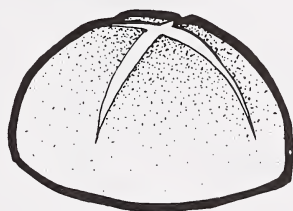
Bran Muffin



Bread



Pancakes



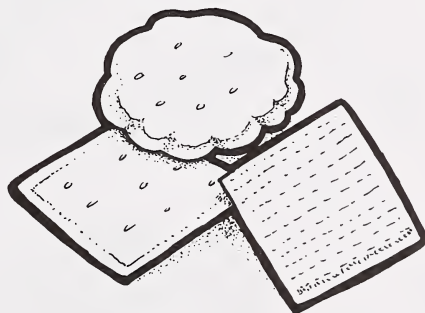
Bun



Cold Cereal



Pasta

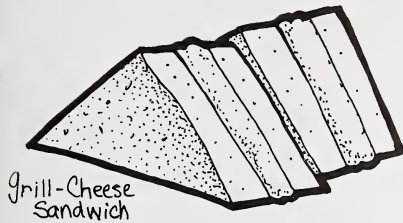


Crackers



Rice

Mixed Dishes and Other Foods



Grill-Cheese Sandwich



Pizza

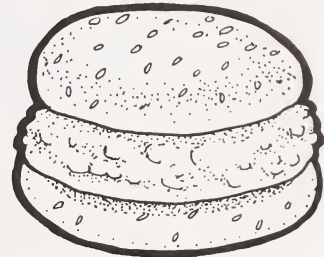
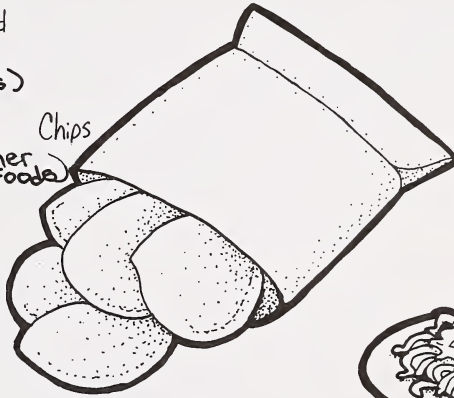


Chocolate-covered Doughnut
(Other Foods)

Macaroni and Cheese



Chips
(Other Foods)



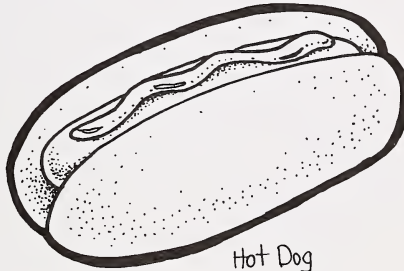
Hamburger



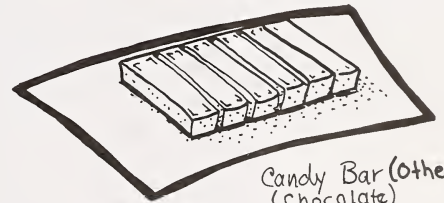
Spaghetti and Meatballs



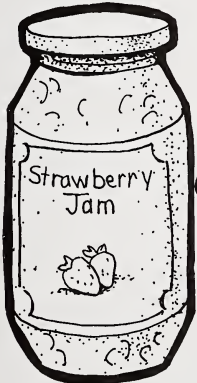
Butter
(Other Foods)



Hot Dog



Candy Bar (Other Foods)
(Chocolate)



(Other Foods)



Jelly

(Other Foods)



Apple Pie
(Other Foods)



(Other Foods)



(Other Foods)



Birthday Cake
(Other Foods)



(Other Foods)

RECOMMENDED FOR USE
IN ALBERTA SCHOOLS

Food Guide

TO HEALTHY EATING

FOR PEOPLE FOUR YEARS AND OVER

Different People Need Different Amounts of Food

The amount of food you need every day from the 4 food groups and other foods depends on your age, body size, activity level, whether you are male or female and if you are pregnant or breast-feeding. That's why the Food Guide gives a lower and higher number of servings for each food group. For example, young children can choose the lower number of servings, while male teenagers can go to the higher number. Most other people can choose servings somewhere in between.

Grain Products

5-12

SERVINGS PER DAY

1 Serving

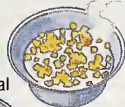


1 Slice



Cold Cereal

30 g



Hot Cereal

175 mL

3/4 cup

2 Servings



1 Bagel, Pita or Bun



Pasta or Rice

250 mL

1 cup

Vegetables & Fruit

5-10

SERVINGS PER DAY

1 Serving



1 Medium Size Vegetable or Fruit

Fresh, Frozen or Canned Vegetables or Fruit



125 mL

1/2 cup

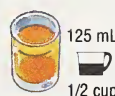
Salad



250 mL

1 cup

Juice



125 mL

1/2 cup

Milk Products

SERVINGS PER DAY

Children 4-9 years: 2-3
Youth 10-16 years: 3-4
Adults: 2-4
Pregnant & Breast-feeding Women: 3-4

1 Serving



250 mL

1 cup

3"x1"x1"
50 g

Cheese

2 Slices
50 g

175 g

3/4 cup

Other Foods

Taste and enjoyment can also come from other foods and beverages that are not part of the 4 food groups. Some of these foods are higher in fat or Calories, so use these foods in moderation.

Meat & Alternatives

2-3

SERVINGS PER DAY

1 Serving

Meat, Poultry or Fish
50-100 g

Fish

1/3-2/3 Can
50-100 g

Beans

125-250 mL



1-2 Eggs



100 g

1/3 cup



Peanut Butter

30 mL 2 tbsp

Enjoy eating well, being active and feeling good about yourself. That's

VITALITY

CANADA'S

Food Guide

TO HEALTHY EATING

Enjoy a variety
of foods from each
group every day.

Choose lower-
fat foods
more often.



Grain Products

Choose whole grain
and enriched
products more
often.

Vegetables & Fruit

Choose dark green and
orange vegetables and
orange fruit more often.

Milk Products

Choose lower-fat
milk products more
often.

Meat & Alternatives

Choose leaner meats,
poultry and fish, as well
as dried peas, beans and
lentils more often.

Appendix A Corrected Summary Tables of the Recommended Nutrient Intakes, 1990

Editor's Note: These summary tables are consistent with the text of Nutrition Recommendations and correct the typographical errors made in the summary tables of that report. In Table 19, nutrients related to the recommendation for energy are made to correspond to at least 2000 kcal. The body weights are similar to those in Table 20. In Table 20, changes to the columns for protein, Vitamin A, folate, and Vitamin B₁₂ should be noted.

Other typographical errors that should be corrected in the body of the original report are:

- p. 4 G. Sarwar added to list of reviewers
- p. 27 Age 16-18, males, 51 kcal/kg
- p. 35 Table 8, shredded wheat cereal, 5.5% moisture
- p. 37 last paragraph, 50-60% of energy
- p. 161 Table 17, signs for greater and less than are reversed

Summary of Recommended Nutrient Intakes¹

Table 19
Summary of Examples of Recommended Nutrients Based on Energy Expressed as Daily Rates

Age	Sex	Energy kcal	Thiamin mg	Riboflavin mg	Niacin NE ^a	n-3 PUFA ^a g	n-6 PUFA g
Months							
0-4	Both	600	0.3	0.3	4	0.5	3
5-12	Both	900	0.4	0.5	7	0.5	3
Years							
1	Both	1100	0.5	0.6	8	0.6	4
2-3	Both	1300	0.6	0.7	9	0.7	4
4-6	Both	1800	0.7	0.9	13	1.0	6
7-9	M	2200	0.9	1.1	16	1.2	7
	F	1900	0.8	1.0	14	1.0	6
10-12	M	2500	1.0	1.3	18	1.4	8
	F	2200	0.9	1.1	16	1.2	7
13-15	M	2800	1.1	1.4	20	1.5	9
	F	2200	0.9	1.1	16	1.2	7
16-18	M	3200	1.3	1.6	23	1.8	11
	F	2100	0.8	1.1	15	1.2	7
19-24	M	3000	1.2	1.5	22	1.6	10
	F	2100	0.8	1.1	15	1.2	7
25-49	M	2700	1.1	1.4	19	1.5	9
	F	1900	0.8 ^c	1.0 ^c	14 ^c	1.1 ^c	7 ^c
50-74	M	2300	0.9	1.2	16	1.3	8
	F	1800	0.8 ^c	1.0 ^c	14 ^c	1.1 ^c	7 ^c
75+	M	2000	0.8	1.0	14	1.1	7
	F ^d	1700	0.8 ^c	1.0 ^c	14 ^c	1.1 ^c	7 ^c
Pregnancy (additional)							
1st Trimester		100	0.1	0.1	1	0.05	0.3
2nd Trimester		300	0.1	0.3	2	0.16	0.9
3rd Trimester		300	0.1	0.3	2	0.16	0.9
Lactation (additional)		450	0.2	0.4	3	0.25	1.5

a. PUFA, polyunsaturated fatty acids.

b. Niacin Equivalents.

c. Level below which intake should not fall.

d. Assumes moderate (more than average) physical activity.

¹Reprinted from Health and Welfare Canada. Nutrition Recommendations. The Report of the Scientific Review Committee. Ottawa: Supply and Services Canada, 1990. These revisions are provided as a service to our readers. Copyright, Health and Welfare Canada, with corrections.

Summary of Recommended Nutrient Intakes¹

Table 20.

Summary Examples of Recommended Nutrient Intake Based on Age and Body Weight Expressed as Daily Rates

Age	Sex	Weight kg	Protein g	Vit. A RE ^a	Vit. D µg	Vit. E mg	Vit. C mg	Folate µg	Vit. B ₁₂ µg	Cal- cium mg	Phos- phorus mg	Mag- nesium mg	Iron mg	Iodine µg	Zinc mg
Months															
0-4	Both	6.0	12 ^b	400	10	3	20	25	0.3	250 ^c	150	20	0.3 ^d	30	2 ^d
5-12	Both	9.0	12	400	10	3	20	40	0.4	400	200	32	7	40	3
Years															
1	Both	11	13	400	10	3	20	40	0.5	500	300	40	6	55	4
2-3	Both	14	16	400	5	4	20	50	0.6	550	350	50	6	65	4
4-6	Both	18	19	500	5	5	25	70	0.8	600	400	65	8	85	5
7-9	M	25	26	700	2.5	7	25	90	1.0	700	500	100	8	110	7
	F	25	26	700	2.5	6	25	90	1.0	700	500	100	8	95	7
10-12	M	34	34	800	2.5	8	25	120	1.0	900	700	130	8	125	9
	F	36	36	800	2.5	7	25	130	1.0	1100	800	135	8	110	9
13-15	M	50	49	900	2.5	9	30 ^e	175	1.0	1100	900	185	10	160	12
	F	48	46	800	2.5	7	30 ^e	170	1.0	1000	850	180	13	160	9
16-18	M	62	58	1000	2.5	10	40 ^e	220	1.0	900	1000	230	10	160	12
	F	53	47	800	2.5	7	30 ^e	190	1.0	700	850	200	12	160	9
19-24	M	71	61	1000	2.5	10	40 ^e	220	1.0	800	1000	240	9	160	12
	F	58	50	800	2.5	7	30 ^e	180	1.0	700	850	200	13	160	9
25-49	M	74	64	1000	2.5	9	40 ^e	230	1.0	800	1000	250	9	160	12
	F	59	51	800	2.5	6	30 ^e	185	1.0	700	850	200	13	160	9
50-74	M	73	63	1000	5	7	40 ^e	230	1.0	800	1000	250	9	160	12
	F	63	54	800	5	6	30 ^e	195	1.0	800	850	210	8	160	9
75+	M	69	59	1000	5	6	40 ^e	215	1.0	800	1000	230	9	160	12
	F	64	55	800	5	5	30 ^e	200	1.0	800	850	210	8	160	9
Pregnancy (additional)															
1st Trimester			5	0	2.5	2	0	200	0.2	500	200	15	0	25	6
2nd Trimester			20	0	2.5	2	10	200	0.2	500	200	45	5	25	6
3rd Trimester			24	0	2.5	2	10	200	0.2	500	200	45	10	25	6
Lactation (additional)															
			20	400	2.5	3	25	100	0.2	500	200	65	0	50	6

a. Retinol Equivalents.

b. Protein is assumed to be from breast milk and must be adjusted for infant formula.

c. Infant formula with high phosphorus should contain 375 mg calcium.

d. Breast milk is assumed to be the source of the mineral.

e. Smokers should increase vitamin C by 50%.

¹Reprinted from Health and Welfare Canada. Nutrition Recommendations. The Report of the Scientific Review Committee. Ottawa: Supply and Services Canada, 1990. These revisions are provided as a service to our readers. Copyright, Health and Welfare Canada, with corrections.

The Stomach Blender:

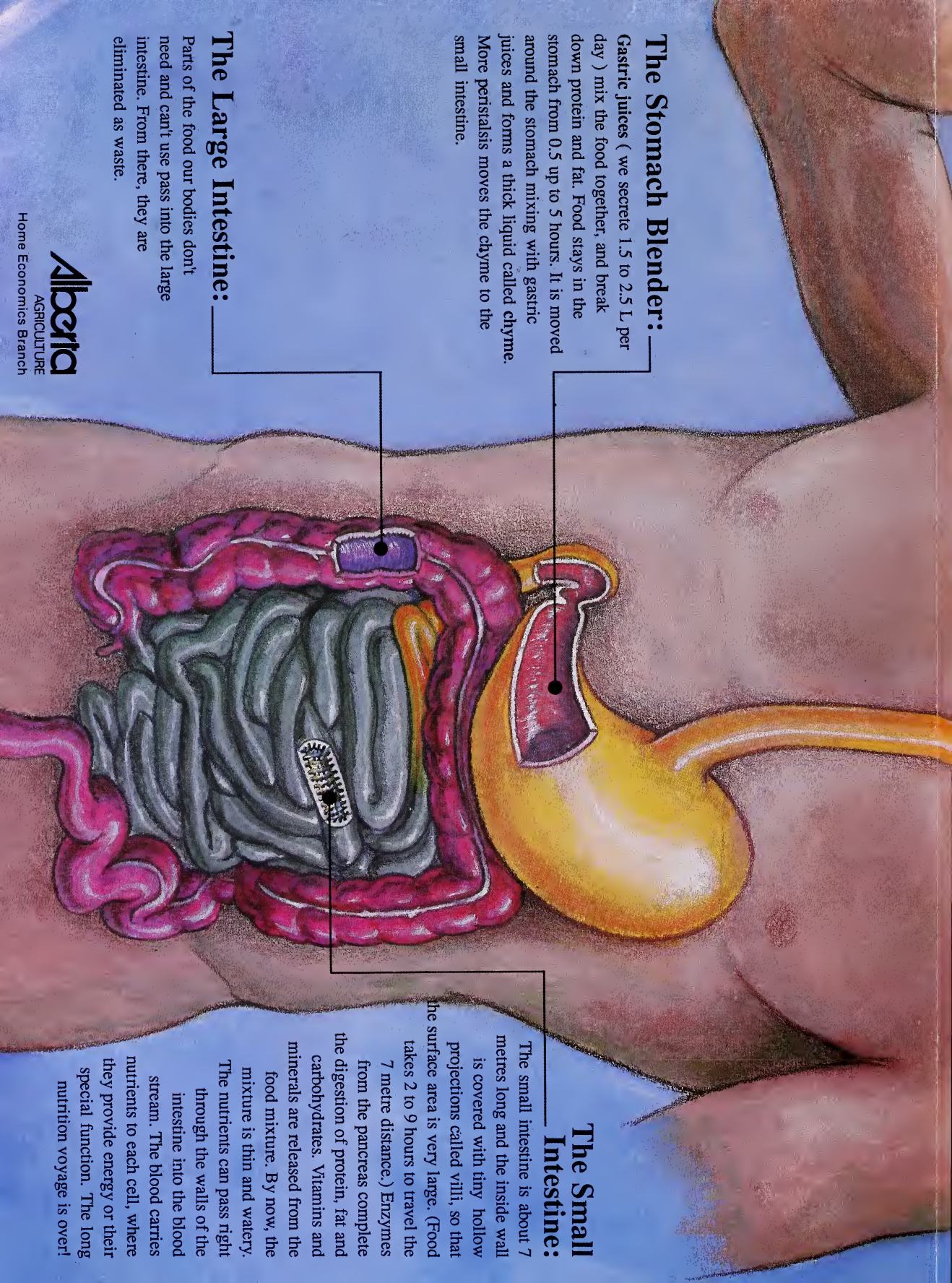
Gastric juices (we secrete 1.5 to 2.5 L per day) mix the food together, and break down protein and fat. Food stays in the stomach from 0.5 up to 5 hours. It is moved around the stomach mixing with gastric juices and forms a thick liquid called chyme. More peristalsis moves the chyme to the small intestine.

The Large Intestine:

Parts of the food our bodies don't need and can't use pass into the large intestine. From there, they are eliminated as waste.

The Small Intestine:

The small intestine is about 7 metres long and the inside wall is covered with tiny hollow projections called villi, so that the surface area is very large. (Food takes 2 to 9 hours to travel the 7 metre distance.) Enzymes from the pancreas complete the digestion of protein, fat and carbohydrates. Vitamins and minerals are released from the food mixture. By now, the mixture is thin and watery. The nutrients can pass right through the walls of the intestine into the blood stream. The blood carries nutrients to each cell, where they provide energy or their special function. The long nutrition voyage is over!



Alberta

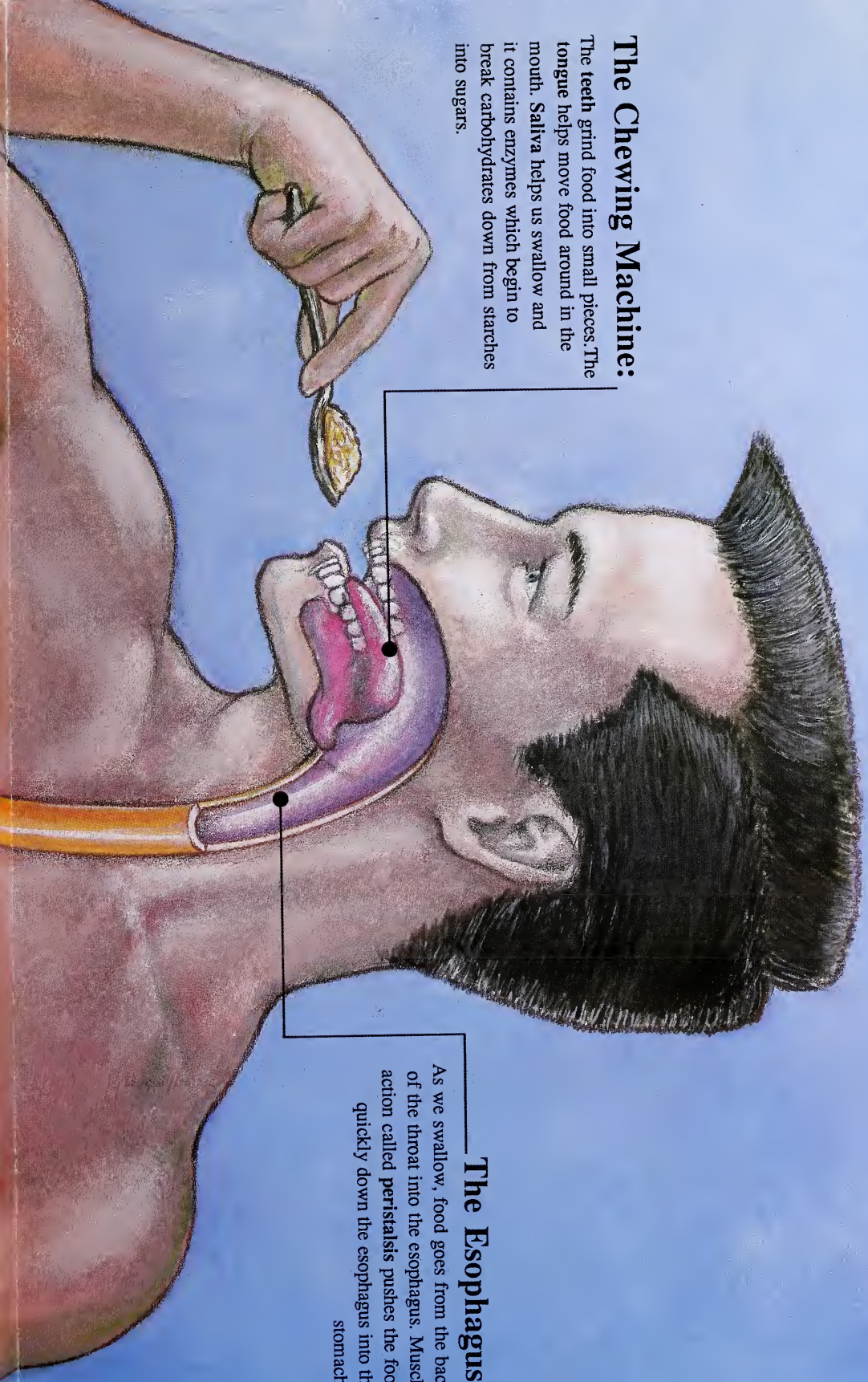
AGRICULTURE

Home Economics Branch

The Nutrition Voyage

The Chewing Machine:

The teeth grind food into small pieces. The tongue helps move food around in the mouth. Saliva helps us swallow and it contains enzymes which begin to break carbohydrates down from starches into sugars.



The Esophagus:

As we swallow, food goes from the back of the throat into the esophagus. Muscle action called peristalsis pushes the food quickly down the esophagus into the stomach.



Alberita
AGRICULTURE
Home Economics Branch

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nutrient value of some common foods

Revised 1988

 **Health
and Welfare
Canada**

 **Santé et
Bien-être social
Canada**

**Bien-être social
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Nutrient Value of Some Common Foods

Revised 1988

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Introduction

Because more and more Canadians want to know about the nutrients present in their foods, the revised publication "Nutrient Value of Some Common Foods", 1988, has been prepared.

This publication which presents values for 18 nutrients of approximately 700 commonly used foods, is a handy reference for you. You can use it to choose your foods, to plan your menus and to assist you in understanding nutrition labelling.

Educators will also find this publication a useful reference in guiding you towards better food choices through an understanding of the nutrient content of the foods you eat.

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Facts about the Foods

Foods are grouped alphabetically under the following 11 food headings:

Milk, Cheese, Cream, Related Products
Eggs
Meat, Poultry, Fish, Shellfish, Related Products
Legumes, Nuts and Seeds
Vegetables, Related Products
Fruits, Related Products
Bread, Cereals, Related Products
Combination Dishes
Fats and Oils
Sugars and Sweets
Miscellaneous Items

This classification makes it easy to compare the nutrient content of various food items within a food group. For example, you can compare the vitamin C content of various fruits within the Fruits and Related Products group.

Products for *special dietary use* such as low sodium products, as well as infant formulae and baby foods, are not included. The nutrient values of these products are well documented on the labels by the manufacturers, or can be provided by major suppliers in local areas.

Approximate metric measure is shown for each food in its ready-to-eat form. For your convenience, some helpful approximate metric equivalents to customary household measures are presented in Table 1.

Values for meats are given as cooked and without drippings. For various cuts, two sets of values are given; meat including the fat (lean plus fat) and meat from which the fat has been trimmed (lean). One fish (sole) was selected to represent several cooking methods with and without fat such as: baked with butter, margarine and without added fat.

One canned fruit (peaches) packed in water, juice and various syrups is given to demonstrate the differences in energy content.

Pastas are all the same dough. Therefore such forms as linguine and fettuccini may be calculated from the values for spaghetti.

Facts about the Nutrients

Values for the eighteen (18) nutrients in Nutrient Value of Some Common Foods, 1988, have been obtained from the Canadian Nutrient File, Health Protection Branch, Health and Welfare Canada.

The values for *food energy* are expressed in kilocalories (kcal) and kilojoules (kJ). (1 kcal = 4.184 kJ). The energy value of food is derived from protein, carbohydrate and fat.

The fat content of foods is presented as total fat, total saturated fatty acids, total polyunsaturated fatty acids and cholesterol.

The tables include four minerals (calcium, iron, sodium, potassium) and six vitamins (vitamin A, thiamin, riboflavin, niacin, folate, vitamin C).

Dietary fibre is included for foods for which analyzed values are available.

Dashes indicate a lack of data for a nutrient; zeros indicate an analyzed zero content of the nutrient; trace indicates a measurable quantity found but too small to be included.

Abbreviations
and Symbols

g	gram
kg	kilogram
mg	milligram
mcg	microgram
mL	millilitre
cm	centimetre
mm	millimetre
%	per cent
diam.	diameter
PUFA	Polyunsaturated Fatty Acids
SFA	Saturated Fatty Acids
kcal	kilocalorie
kJ	kilojoule
RE	Retinol Equivalent
NE	Niacin Equivalent
O	none
tr	trace
–	no suitable value found
B.F.	Butter Fat

Table 1. Approximate
Metric Equivalents to
Customary Household
Measures

Length	1/8 inch: 3 mm 1/4 inch: 6 mm 1/2 inch: 2 cm 1 inch: 2.5 cm 2 inches: 5 cm
Volume	Liquid measures: 1 cup (8 fluid ounces): 250 mL 3/4 cup (6 fluid ounces): 200 mL 1/2 (4 fluid ounces): 125 mL Dry measures: 1 cup: 250 mL 1/2 cup: 125 mL 1/4 cup: 50 mL Small liquid and dry measures: 1 teaspoon: 5 mL 1 tablespoon: 15 mL 1 coffee measure: 25 mL
Mass	1 ounce: approx. 30 g

References:

1. Canadian Standards Association. Canadian Metric Practice Guide. Canadian Standards Association, Rexdale, Ontario, 1976, 48 p.
2. The Metric Committee. Canadian Home Economics Association. Style Guide for Metric Recipes. Canadian Home Economics Association, Ottawa. 1977. 10 p.

Bibliography

The condensed Canadian Nutrient File
Nutrition Research Division
Bureau of Nutritional Sciences
Health Protection Branch
Health and Welfare Canada, 1988.

Food	Measure	Weight	Water	Energy	Energy	Protein	Carbohydrates	Fat	SFA	PUFA	Cholesterol	Calcium	Iron	Sodium	Potassium	Vitamin A	Thiamin	Riboflavin	Niacin	NE	mg	Folate	Vitamin C	Dietary Fibre
		g	%	kcal	kJ	g	g	g	g	g	mg	mg	mg	mg	mg	RE	mg	mg	mg	mg	mg	mg	mg	g
Milk, Cheese, Cream, Related Products																								
Cheese																								
1	Blue	45	42	159	665	10	1	13	8	tr	34	237	.1	628	115	103	.01	.17	2.8	16	0	-	-	
2	Brick	45	41	167	698	10	1	13	8	tr	42	303	.2	252	61	136	tr	.16	2.5	9	0	-	-	
3	Camembert	45	52	135	564	9	tr	11	7	tr	32	174	.1	379	84	113	.01	.22	2.6	28	0	-	-	
4	Cheddar	45	37	181	758	11	tr	15	9	tr	47	325	.3	279	44	136	.01	.17	2.4	8	0	-	-	
5	Cheddar, grated	15 mL	7	37	28	118	2	tr	2	1	tr	7	50	tr	43	7	21	tr	.03	.4	1	0	-	-
6	Cottage, creamed, 4.5% B.F.	250 mL	230	79	238	995	29	6	10	7	tr	34	138	.3	931	194	110	.05	.38	5.6	28	0	-	-
7	Cottage, 2% B.F.	250 mL	239	79	214	897	33	9	5	3	tr	20	164	.4	970	230	48	.06	.44	6.4	31	0	-	-
8	Cottage, dry curd, 0.4% B.F.	250 mL	153	80	129	542	26	3	tr	tr	10	49	.4	20	50	12	.04	.22	5.1	.23	0	-	-	
9	Cream	15 mL	15	54	52	219	1	tr	5	3	tr	16	12	.2	44	18	66	tr	.03	.2	2	0	-	-
10	Feta	45	53	123	513	7	2	10	7	tr	41	229	.3	519	29	60	.07	.39	2.0	15	0	-	-	
11	Gouda	45	41	164	684	11	1	13	8	tr	52	321	.1	376	55	80	.01	.15	2.7	10	0	-	-	
12	Gruyere	45	33	186	778	13	tr	15	9	tr	50	455	tr	151	36	135	.03	.13	3.2	5	0	-	-	
13	Mozzarella	45	52	132	552	9	1	10	6	tr	37	242	tr	175	31	113	tr	.11	2.2	3	0	-	-	
14	Mozzarella, made with partly skimmed milk	45	52	118	495	11	1	7	5	tr	27	305	.1	217	39	82	tr	.14	2.7	4	0	-	-	
15	Muenster	45	42	166	694	11	tr	14	9	tr	43	323	.2	282	60	142	tr	.14	2.5	5	0	-	-	
16	Parmesan, grated	15 mL	5	18	23	95	2	tr	2	tr	4	69	tr	93	5	9	tr	.02	.5	tr	0	-	-	
17	Provolone	45	41	158	662	12	tr	12	8	tr	31	340	.2	394	62	119	tr	.14	2.7	5	0	-	-	
18	Ricotta, made with partly skimmed milk	45	74	62	260	5	2	4	2	tr	14	122	.2	56	56	51	tr	.08	1.0	6	0	-	-	
19	Ricotta, made with whole milk	45	72	78	327	5	1	6	4	tr	23	93	.2	38	47	60	tr	.09	1.0	5	0	-	-	
20	Swiss	45	37	169	707	13	2	12	8	tr	41	432	tr	117	50	114	.01	.16	3.0	3	0	-	-	
21	Processed spread, cheddar	15 mL	15	48	44	182	2	1	3	2	tr	8	84	tr	244	36	28	tr	.07	.6	1	0	-	-
22	Processed spread, made with skim milk	15 mL	15	-	29	120	4	2	tr	0	0	-	-	-	296	61	-	-	.9	-	0	-	-	
23	Processed food cheddar, cold pack	45	43	149	623	9	4	11	7	tr	29	224	.4	435	163	91	.01	.20	2.2	2	0	-	-	
24	Processed, cheddar	45	39	169	707	10	tr	14	9	tr	42	277	.2	644	73	131	.01	.16	2.5	4	0	-	-	
25	Processed, cheddar, made with skim milk	45	59	86	360	11	4	3	2	tr	16	253	.1	693	133	47	.02	.19	2.0	4	0	-	-	
26	Processed, swiss	45	42	150	628	11	tr	11	7	tr	38	347	.3	617	97	103	tr	.12	2.7	3	0	-	-	
Cream																								
27	Cereal (half and half), 12% B.F.	250 mL	256	80	344	1441	8	11	31	19	1	99	267	.2	105	331	286	.09	.38	2.0	5	2	-	-
28	Cereal (half and half), 12% B.F.	15 mL	15	80	20	84	tr	tr	2	1	tr	6	16	tr	6	19	17	tr	.02	.1	tr	tr	-	-
29	Sour, 14% B.F.	250 mL	253	78	385	1612	8	11	35	22	1	99	270	.2	109	335	330	.09	.38	1.9	28	2	-	-
30	Sour, 14% B.F.	15 mL	15	78	23	96	tr	tr	2	1	tr	6	16	tr	6	20	tr	.02	.1	2	tr	-	-	-
31	Table (coffee), 18% B.F.	250 mL	253	75	467	1953	7	10	46	28	2	155	247	.1	102	312	429	.08	.37	1.8	5	2	-	-

Food	Measure	Weight	Water	Energy	Energy	Protein	Carbohydrates	Fat	SFA	PUFA	Cholesterol	Calcium	Iron	Sodium	Potassium	Vitamin A	Thiamin	Riboflavin	Niacin	Folate	Vitamin C	Dietary Fibre
	g	%	kcal	kJ	g	g	g	g	g	g	mg	mg	mg	mg	mg	RE	mg	mg	NE	mcg	mg	g

Frozen Desserts	32	Table (coffee), 18% B.F.																					
	33	Whipped topping pressurized																					
	34	Whipping, 35% B.F.																					
	35	Whipping, 35% B.F.																					
	36	Ice cream, vanilla, hard, rich, 16% B.F.																					
Frozen Desserts	37	Ice cream, vanilla, hard, 10% B.F.																					
	38	Ice milk, vanilla soft serve																					
	39	Sherbet, orange																					
	40	Coffee whitener, (Nondairy), liquid, frozen																					
	41	Coffee whitener, (Non-dairy), powdered																					
Imitation Cream Products	42	Dessert topping, (Non-dairy), powdered + whole milk																					
	43	Dessert topping, (Non-dairy), semisolid (frozen)																					
	44	Dessert topping, (Non-dairy), whipped, pressurized																					
	45	Eggnog, commercial																					
	46	Milk, chocolate, partly skimmed, 2% B.F.																					
Milk Beverages	47	Milk, hot cocoa, made with whole milk																					
	48	Milk, malted, made with whole milk																					
	49	Milk, shake, chocolate thick, commercial type																					
	50	Milk, shake, vanilla, thick, commercial type																					
	51	Pudding mix, low calorie, prepared with skim milk																					
Milk Desserts	52	Pudding, canned, chocolate																					
	53	Pudding, canned, vanilla																					
	54	Pudding, cornstarch, cooked																					
	55	Pudding, cornstarch, instant with whole milk																					

Food	Measure	Weight g	Water %	Energy kcal	Energy kJ	Protein g	Carbohydrates g	Fat g	SFA g	PUFA g	Cholesterol mg	Calcium mg	Iron mg	Sodium mg	Potassium mg	Vitamin A RE	Thiamin mg	Riboflavin mg	Niacin NE	Folate mcg	Vitamin C mg	Dietary fibre g	
56	Pudding, custard, baked	125 mL	140	77	161	674	8	16	8	4	tr	147	157	6	111	204	147	.06	.27	1.5	10	tr	-
57	Pudding, rice with raisins	125 mL	140	66	204	855	5	37	4	2	tr	15	137	6	99	248	46	.04	.20	1.2	7	0	-
58	Pudding, tapioca (minute)	125 mL	87	72	117	488	4	15	4	2	tr	84	91	.3	136	117	76	.04	.16	.9	5	tr	-
59	Buttermilk	250 mL	259	90	105	438	9	12	2	1	tr	9	301	.1	272	392	21	.09	.40	1.7	13	3	-
60	Goat, whole	250 mL	258	87	178	743	9	11	11	7	tr	29	344	.1	128	527	144	.12	.36	2.6	2	3	-
61	Human, whole, mature	250 mL	260	88	181	757	3	18	11	5	1	36	84	tr	44	133	166	.04	.09	1.2	14	13	-
62	Partly skimmed, 2% B.F.	250 mL	258	89	128	536	9	12	5	3	tr	19	314	.1	129	398	147	.10	.43	2.2	13	2	-
63	Skim	250 mL	259	91	90	378	9	13	tr	tr	tr	5	320	.1	133	429	158	.09	.36	2.3	13	3	-
64	Soybean, fluid	250 mL	254	93	84	350	7	5	5	1	2	0	10	1.5	30	357	8	.41	.18	2.2	4	0	3
65	Whole, 3.3% B.F.	250 mL	258	88	159	563	8	12	9	5	tr	35	308	.1	126	391	80	.10	.42	2.2	13	2	-
66	Condensed, sweetened, canned	250 mL	323	27	1036	4335	26	176	28	18	1	109	916	.6	410	1200	262	.29	1.34	6.7	36	8	-
67	Dry, skim, powder, reconstituted (25g yields 250 mL)		25	91	90	375	9	13	tr	tr	tr	5	308	tr	137	426	178	.10	.44	2.3	12	1	-
68	Dry, whole	15 mL	8	2	40	166	2	3	2	1	tr	8	73	tr	30	106	22	.02	.10	.5	3	tr	-
69	Evaporated, whole, 7.6% B.F. undiluted	250 mL	266	74	357	1496	18	27	20	12	tr	78	694	.5	281	806	144	.13	.84	4.8	21	44	-
70	Evaporated, 2% B.F. undiluted	250 mL	268	78	246	1028	20	30	5	3	tr	21	738	.6	296	851	210	.12	.84	5.1	23	44	-
71	Evaporated, skim 0.2% B.F. undiluted	250 mL	270	79	210	880	20	31	tr	tr	tr	10	782	.8	311	895	316	.12	.83	5.3	23	44	-
72	Coffee and vanilla varieties, 1.25% B.F.		125	79	107	447	6	17	2	1	tr	6	214	tr	82	274	16	.05	.25	.7	13	tr	-
73	Frozen, fruit, 6.3% B.F.	125	-	148	619	4	23	5	-	-	-	145	-	63	199	-	.03	.27	.2	-	4	-	-
74	Fruit flavour, 1.4% B.F.	125	74	131	550	6	23	2	1	tr	7	211	tr	81	270	19	.05	.25	.7	13	tr	-	-
75	Plain, 1.5% B.F.	125	85	79	331	7	9	2	1	tr	8	228	.1	88	292	20	.06	.27	.8	14	1	-	-

Eggs

76	Egg, large, fried in butter	1 egg	46	72	83	347	5	tr	6	2	tr	278	26	1.0	144	58	83	.03	.13	1.5	22	0	-
77	Egg, large, raw or cooked in shell, without shell	1 egg	50	75	79	330	6	tr	6	2	tr	274	28	1.0	69	65	78	.04	.15	1.6	33	0	-
78	Egg, large, scrambled, with milk and butter	1 egg	64	76	95	395	6	1	7	3	tr	282	47	1.0	155	85	89	.04	.16	1.6	22	tr	-
79	Egg, white, large, raw or cooked in shell	1 white	33	88	16	67	3	tr	tr	0	0	4	tr	50	45	0	tr	.09	.9	5	0	-	-
80	Egg, yolk, large, raw or cooked in shell	1 yolk	17	49	63	263	3	tr	6	2	tr	272	26	.9	8	15	94	.04	.07	.7	26	0	-
81	Egg substitute, frozen (yolk replaced)	60mL	61	73	97	408	7	2	7	1	4	1	44	1.2	122	130	82	.07	.24	1.8	10	tr	-

Food	Measure	Weight	Water	Energy	Energy	Protein	Carbohydrates	Fat	SFA	PUFA	Cholesterol	Calcium	Iron	Sodium	Potassium	Vitamin A	Thiamin	Riboflavin	Niacin	Folate	Vitamin C		
		g	%	kcal	kJ	g	g	g	g	g	mg	mg	mg	mg	mg	RE	mg	mg	NE	mcg	mg		
Assorted Meat Products	82	Blood sausage or pudding (12 cm × 0.2 cm)	1 slice	30	47	113	474	4	tr	10	4	1	36	2	1.9	204	11	0	.02	.04	1.3	2	0
	83	Bologna, beef and pork (11 cm × 0.2 cm)	1 slice	22	54	70	291	3	tr	6	2	tr	12	3	.3	224	40	0	.04	.03	1.0	1	0
	84	Bologna, turkey (11 cm × 0.2 cm)	1 slice	22	65	44	183	3	tr	3	1	tr	22	18	.3	193	44	0	.01	.04	1.2	2	0
	85	Braunschweiger (6 cm × 0.6 cm)	1 slice	15	48	54	225	2	tr	5	2	tr	23	1	1.4	171	30	633	.04	.23	1.6	7	0
	86	Creton	15 mL	13	60	59	245	2	tr	5	2	tr	11	2	.3	37	25	tr	.05	.02	.8	tr	0
	87	Ham, luncheon meat, sliced, packaged (11 cm × 11 cm × 0.2 cm)	1 slice	27	65	49	206	5	tr	3	tr	tr	15	2	.3	356	90	0	.23	.07	2.4	tr	0
	88	Liverwurst	15 mL	15	52	49	205	2	tr	4	2	tr	24	4	1.0	129	26	1245	.04	.16	1.0	5	0
	89	Salami, cooked, beef and pork (11 cm diam. × 0.2 cm)	1 slice	22	60	55	230	3	tr	4	2	tr	14	3	.6	234	44	0	.05	.08	1.2	tr	0
	90	Salami, cooked, turkey (11 cm diam. × 0.2 cm)	1 slice	22	66	43	180	4	tr	3	tr	tr	18	4	.4	221	54	0	.01	.04	1.4	tr	0
	91	Salami, dry type (4.5 cm diam. × 0.3 cm)	1 slice	6	35	25	105	1	tr	2	tr	tr	5	tr	tr	112	23	0	.04	.02	.5	tr	0
Beef	92	Sausages, beef and pork, cooked, 16 per 500 g package	1 sausage	15	45	59	249	2	tr	5	2	tr	11	2	.2	121	28	0	.05	.02	.8	tr	0
	93	Sausages, pork, cooked, 16 per 500 g package	1 sausage	15	45	55	232	3	tr	5	2	tr	12	5	.2	194	54	0	.11	.04	1.1	tr	0
	94	Wieners, beef and pork, 12 per 450 g package	1 wiener	37	54	118	495	4	tr	11	4	1	19	4	.4	414	62	0	.07	.04	1.5	1	0
	95	Wieners, chicken, 12 per 450 g package	1 wiener	37	58	95	398	5	3	7	2	1	37	35	.7	507	31	14	.02	.04	1.8	1	0
	96	Wieners, turkey, 12 per 450 g package	1 wiener	37	63	84	350	5	tr	7	2	2	40	39	.7	528	66	0	.02	.07	2.2	3	0
	97	Corned, brisket, cooked	90	60	226	943	16	tr	17	6	tr	88	7	1.7	1021	131	0	.02	.15	5.2	5	0	
	98	Corned, canned	4 slices	84	58	210	879	23	0	13	5	tr	72	10	1.7	845	114	0	.02	.12	5.5	8	0
	99	Corned, hash with potatoes	250 mL	232	67	420	1757	20	25	26	13	tr	77	30	4.6	1253	464	0	.02	.21	8.6	30	0
	100	Ground, lean, broiled, medium (8cm diam. × 1.5cm)	1 patty	88	59	209	875	22	0	13	5	tr	60	6	2.1	62	275	0	.05	.24	8.5	8	0
	101	Ground, regular, broiled, medium (8 cm diam. × 1.5 cm)	1 patty	88	54	254	1066	21	0	18	7	tr	64	10	2.1	73	257	0	.03	.17	9.0	8	0
102	Ground, regular, broiled, well done (8 cm diam. × 1.5 cm)	1 patty	88	52	257	1074	24	0	17	7	tr	72	11	2.4	82	288	0	.04	.19	10.2	9	0	
103	Ground, regular, pan-fried, medium (8 cm diam. × 1.5 cm)	1 patty	88	52	269	1126	21	0	20	8	tr	63	10	2.2	74	264	0	.03	.18	9.1	8	0	

Food	Measure	Weight g	Water %	Energy kcal	Energy kJ	Protein g	Carbohydrates g	Fat g	SFA g	PUFA g	Cholesterol mg	Calcium mg	Iron mg	Sodium mg	Potassium mg	Vitamin A µg	Thiamin mg	Riboflavin mg	Niacin NE	Folate mcg	Vitamin C mg	Dietary Fibre g	
104	Ground, regular, pan-fried, well done (8 cm diam. × 1.5 cm)	1 patty	88	53	252	1052	24	0	17	7	tr	70	11	2.4	82	292	0	.04	.19	10.1	9	0	-
105	Roast, blade, braised, (11 cm × 6 cm × 0.6 cm) lean and fat	2 pieces	88	53	249	1040	25	0	16	7	tr	76	13	2.6	43	240	0	.06	.21	6.8	4	0	-
106	lean only	2 pieces	88	53	216	905	28	0	11	4	tr	77	16	3.1	51	287	0	.07	.25	7.7	5	0	-
107	Roast, rib, roasted (11cm x 6cm x 0.6cm) lean and fat	2 pieces	89	52	256	1071	22	0	18	8	tr	61	7	1.7	52	273	0	.06	.16	7.1	6	0	-
108	lean only	2 pieces	89	59	196	818	26	0	10	4	tr	60	8	2.0	64	335	0	.07	.19	8.4	7	0	-
109	Roast, rump, roasted (11cm × 6cm × 0.6cm) lean and fat	2 pieces	89	58	205	859	26	0	10	4	tr	66	5	2.0	56	340	0	.07	.21	8.9	9	0	-
110	lean only	2 pieces	89	70	177	741	27	0	7	3	tr	66	5	2.1	60	360	0	.08	.21	9.1	9	0	-
111	Steak, inside (top) round, broiled (11cm × 6cm x 1.2cm) lean and fat	1 piece	88	63	154	646	26	0	5	2	tr	57	4	2.4	43	339	0	.10	.23	10.0	10	0	-
112	lean only	1 piece	88	63	144	601	26	0	3	1	tr	57	5	2.5	45	352	0	.10	.24	10.3	11	0	-
113	Steak, sirloin, broiled (11cm x 6cm x 1.2cm) lean and fat	1 piece	88	61	188	785	24	0	9	4	tr	64	14	2.5	45	305	0	.10	.23	7.9	8	0	-
114	lean only	1 piece	88	61	163	683	26	0	6	2	tr	64	15	2.7	50	337	0	.11	.26	8.6	9	0	-
115	Stewing, simmered, lean only	250 mL	148	58	335	1403	49	0	14	5	tr	122	12	4.7	70	511	0	.12	.42	14.7	9	0	-
116	Anchovy	3 fillets	12	59	21	88	2	tr	1	tr	tr	7	20	.3	99	71	8	tr	.02	1.1	2	0	-
117	Bluefish, baked or broiled (12cm × 7cm × 1cm)	1 piece	92	68	146	612	24	0	5	tr	tr	64	27	.6	96	386	14	.10	.09	6.2	12	0	-
118	Clams, canned, drained solids	7 clams	84	77	82	344	13	2	2	tr	tr	53	46	3.4	101	118	25	tr	.09	3.3	11	0	-
119	Cod, fresh, broiled with butter or margarine (10cm × 4cm × 2cm)	1 piece	88	65	150	626	25	0	5	tr	tr	71	27	.9	97	358	48	.07	.10	7.2	16	0	-
120	Crab, canned, solids only	150 mL	86	77	87	363	15	tr	2	tr	tr	87	39	.7	860	95	281	.07	.07	4.4	17	0	-
121	Fish sticks, breaded, frozen, cooked	3 sticks	90	66	158	663	15	6	8	3	2	42	10	.4	159	313	0	.04	.06	4.2	11	0	-
122	Haddock, breadcrumb, milk and egg coated, fried	1 fillet	110	66	182	759	22	6	7	2	2	70	44	1.3	195	383	-	.04	.08	7.5	14	2	-
123	Halibut, broiled with butter or margarine (12cm × 7cm × 1cm)	1 piece	92	67	157	658	23	0	6	4	tr	55	15	.7	123	483	188	.05	.06	11.9	11	0	-
124	Herring, smoked, kippered (11cm × 4cm × 0.6cm)	1 fillet	55	61	116	486	12	0	7	1	1	60	36	.8	3427	86	5	.01	.15	4.1	9	0	-
125	Lobster, canned	150 mL	92	77	87	366	17	tr	1	0	0	78	60	.7	193	166	0	.09	.06	4.5	16	0	-
126	Mackerel, canned, solids and liquid	150 mL	95	66	174	727	18	0	11	3	-	89	176	2.0	70	399	123	.06	.20	8.9	12	0	-

Food	Measure	Weight	Water	Energy	Energy	Protein	Carbohydrates	Fat	SFA	PUFA	Cholesterol	Calcium	Iron	Sodium	Potassium	Vitamin A	Thiamin	Riboflavin	Niacin	Folate	Vitamin C	Dietary Fibre
127	Oysters, raw, meat only	90	85	59	249	8	3	2	tr	tr	45	85	5.0	66	109	84	.13	.16	3.6	-	27	-
128	Perch, ocean, frozen, breaded, fried, reheated (17 cm × 5 cm × 1 cm)	1 piece	93	43	297	1241	18	15	18	5	5	54	31	1.2	142	264	0	.09	.10	4.9	8	0
129	Salmon, canned, solids and liquid	150 mL	95	64	193	807	21	0	12	2	5	35	146	9	70	399	67	.03	.15	10.8	25	0
130	Salmon, fresh, broiled or baked with butter or margarine (12 cm × 7 cm × 1 cm)	1 piece	92	63	167	701	25	0	7	2	2	43	117	1.1	107	408	44	.15	.06	13.6	24	0
131	Sardines, canned in oil, solids only	7 medium	84	62	171	713	20	0	9	2	2	118	367	2.4	691	496	55	.03	.17	8.2	13	0
132	Scallops, steamed	7 scallops	90	73	101	422	21	3	1	0	0	48	104	2.7	239	428	27	.09	.05	5.0	15	0
133	Shrimp, canned solids	28 medium	90	70	104	437	22	tr	tr	tr	tr	135	104	2.8	126	110	16	tr	.03	5.6	18	0
134	Shrimp, French fried, batter dipped	11 large	88	57	198	828	18	9	10	3	3	132	63	1.8	164	202	0	.04	.07	5.7	17	0
135	Sole, baked with lemon juice, with butter	1 fillet	90	73	127	532	17	tr	6	3	tr	72	14	3	154	288	57	.05	.09	4.8	-	1
136	Sole, baked with lemon juice, with margarine	1 fillet	90	73	127	532	17	tr	6	1	4	58	15	3	160	289	73	.05	.09	4.8	-	1
137	Sole, baked with lemon juice, without added fat	1 fillet	90	78	85	354	18	tr	1	tr	tr	62	14	3	107	303	11	.05	.09	5.1	-	1
138	Trout, lake, broiled or baked (17 cm × 5 cm × 1 cm)	1 piece	93	71	201	840	21	tr	13	6	-	58	47	4.7	85	272	89	.11	.25	5.4	12	3
139	Tuna salad	125 mL	108	63	198	827	17	10	10	2	-	42	16	1.3	462	280	28	.03	.07	10.2	-	3
140	Tuna, canned in oil, drained solids	125 mL	85	61	167	701	24	0	7	2	1	55	7	1.6	680	256	20	.04	.10	14.6	13	0
141	Tuna, canned in water, drained solids	125 mL	85	63	135	565	30	0	1	tr	tr	48	17	.6	468	255	32	.03	.10	16.9	-	0
142	Whitefish, baked, stuffed (12 cm × 7 cm × 1 cm)	1 piece	92	63	198	828	14	5	13	4	-	40	33	5	179	268	552	.10	.10	4.7	12	0
143	Lep, roasted (11 cm × 6 cm × 0.6 cm)	2 slices	87	54	243	1016	22	0	16	9	tr	85	10	1.5	54	247	0	.13	.24	8.8	2	0
144	lean and fat	2 slices	87	62	162	677	25	0	6	3	tr	87	11	1.9	61	280	0	.14	.26	10.0	2	0
145	lean only																					
146	Loin chop, broiled, lean and fat	1 chop	118	47	424	1772	26	0	35	19	1	116	11	1.5	64	291	0	.14	.27	10.7	2	0
147	lean only																					
148	Shoulder, roasted (7 cm × 6 cm × 0.6 cm)	1 chop	87	62	164	684	25	0	7	4	tr	87	10	1.7	60	275	0	.13	.24	9.8	2	0
149	lean and fat																					
150	lean only																					
151	Heart, beef, simmered	3 slices	83	50	281	1174	18	0	23	13	tr	81	8	1.0	44	202	0	.11	.19	7.2	6	0
152	3 slices	3 slices	83	61	170	712	22	0	8	5	tr	83	10	1.6	55	249	0	.13	.23	8.8	6	0
153	150 mL	150 mL	92	64	161	674	26	tr	5	2	1	178	6	6.9	58	2	0	.13	1.42	8.7	2	1
154	150 mL	150 mL	89	69	128	535	23	tr	3	tr	tr	344	15	6.5	119	159	332	.17	3.61	10.5	87	tr
155	150 mL	150 mL	89	69	134	562	23	0	4	1	tr	427	12	4.7	71	127	69	.35	1.41	10.0	36	9
156	Kidney, beef, braised																					
157	Liver, beef, pan fried (16 cm × 6 cm × 1 cm)	1 piece	86	56	187	779	23	7	7	2	2	415	9	5.4	91	313	9226	.18	3.56	17.9	189	20

Food	Measure	Weight	Water	Energy	Energy	Protein	Carbohydrates	Fat	SFA	PUFA	Cholesterol	Calcium	Iron	Sodium	Potassium	Vitamin A	Thiamin	Riboflavin	Niacin	Folate	Vitamin C	Dietary Fibre
		g	%	kcal	kJ	g	g	g	g	g	mg	mg	mg	mg	mg	RE	mg	mg	NE	mcg	mg	g
153	Liver, calves, fried (8 cm × 6 cm × 0.6 cm)	3 slices	95	248	1037	28	4	13	3	tr	416	12	13.5	112	430	9320	.23	3.96	20.8	190	35	-
154	Liver, chicken, simmered	5 livers	100	157	657	24	tr	5	2	tr	631	14	8.5	51	140	4913	.15	1.75	10.2	770	16	-
155	Liver, pork, braised (16 cm × 6 cm × 1 cm)	1 slice	86	142	594	22	3	4	1	tr	305	9	15.4	42	129	4643	.22	1.89	12.5	140	20	-
156	Sweetbreads (thymus), beef, braised	1 slice	90	287	1200	20	0	22	8	4	265	9	1.3	104	390	0	.08	.20	4.2	1	27	-
157	Tongue, beef, simmered		90	56	255	1067	20	tr	19	8	tr	96	6	3.1	54	162	0	.03	.32	4.5	5	tr
158	Bacon, back, sliced, grilled	1 slice	23	62	43	178	6	tr	2	tr	13	2	2	356	90	0	.19	.05	2.5	tr	5	-
159	Bacon, side, pan-fried crisp	2 slices	13	13	75	313	4	tr	6	2	tr	11	2	2	207	63	0	.09	.04	1.6	tr	4
160	Ham, roasted (11cm × 6cm × 0.6cm)	2 slices	87	58	211	885	19	0	15	5	2	54	6	8	1033	249	0	.52	.19	7.4	3	0
161	lean only	2 slices	87	68	128	535	19	tr	5	2	tr	45	6	7	1319	323	0	.81	.20	8.5	3	0
162	Leg, butt portion, roasted (8cm × 6cm × 0.6cm) lean and fat	2 slices	88	55	233	975	25	0	14	5	2	64	6	9	54	313	3	.63	.29	9.6	5	tr
163	lean only	2 slices	88	60	178	745	27	0	7	2	1	64	9	1.1	70	405	3	.67	.31	10.6	5	tr
164	Loin centre cut chop, broiled, lean and fat	1 chop	87	52	263	1100	24	0	18	6	2	58	3	7	61	312	3	.87	.24	9.6	4	tr
165	lean only	1 chop	72	59	159	664	23	0	7	2	1	48	15	5	55	336	1	.83	.22	9.1	4	tr
166	Shoulder, whole, roasted, (8cm × 6cm × 0.6cm) lean and fat	3 slices	86	52	257	1075	22	0	18	6	2	63	6	1.1	58	261	2	.46	.27	8.2	3	tr
167	lean only	3 slices	86	59	198	828	25	0	10	3	1	63	12	1.2	71	401	2	.50	.31	9.3	4	tr
168	Spareribs braised, lean and fat	2 medium	70	48	235	985	18	0	18	7	2	55	33	1.3	65	224	2	.28	.27	7.8	3	0
169	Tenderloin, roasted (4cm × 4cm × 1.5cm) lean only	3 slices	89	65	148	619	26	0	4	1	tr	61	8	1.4	60	479	2	.84	.35	9.9	5	tr
170	Chicken, broiler or fryer, roasted, Breast meat only	½ breast	86	65	142	594	27	0	3	tr	tr	73	13	9	64	220	5	.06	.10	17.0	3	0
171	Chicken, broiler or fryer, fried, breast meat plus skin plus batter	½ breast	140	52	364	1523	35	13	18	5	4	119	28	1.8	385	281	28	.16	.20	21.4	8	0
172	Chicken, broiler or fryer, roasted, Breast meat plus skin	½ breast	98	62	193	808	29	0	8	2	2	82	14	1.0	70	240	26	.07	.12	18.0	4	0
173	Chicken, broiler or fryer, roasted, drumstick, meat only	2	88	67	151	633	25	0	5	1	1	82	11	1.1	84	216	16	.07	.21	10.2	8	0
174	Chicken, canned, boned with broth	100 mL	87	69	144	601	19	0	7	2	2	54	12	1.4	438	120	30	.01	.11	9.0	3	2
175	Chicken, roasted, flesh only (7 cm × 5 cm × 0.6 cm)	4 slices	92	67	154	643	23	0	6	2	1	69	11	1.1	69	211	11	.06	.14	11.7	5	0

	Food	Measure	Weight g	% Water	Energy kcal	Energy kJ	Protein g	Carbohydrates g	Fat g	SFA g	PUFA g	Cholesterol mg	Calcium mg	Iron mg	Sodium mg	Potassium mg	Vitamin A RE	Thiamin mg	Riboflavin mg	Niacin NE	Folate mcg	Vitamin C mg	Dietary Fibre g
176	Turkey roll, light and dark meat	2 slices	57	70	85	355	10	1	4	1	1	31	18	8	334	154	0	.05	.16	4.6	3	0	-
177	Turkey, all classes, roasted dark meat only	2 slices	86	63	161	673	25	0	6	2	2	73	28	2.0	68	249	0	.05	.21	7.8	8	0	-
178	light meat only	2 slices	86	66	135	565	26	0	3	tr	tr	59	16	1.2	55	262	0	.05	.11	10.8	5	0	-
179	Loin, cutlet or chop, broiled (7 cm × 6 cm × 2 cm)	1 piece	92	59	215	901	24	0	12	6	tr	93	10	2.9	60	272	0	.06	.23	9.4	5	0	-
180	Round with rump, broiled (11 cm × 6 cm × 0.6 cm)	2 slices	87	60	188	786	24	0	10	5	tr	88	10	2.8	58	264	0	.06	.22	9.0	5	0	-
181	Bear, polar, flesh, simmered	90	61	163	684	33	0	4	-	-	-	16	6.5	-	-	-	378	.01	.63	9.3	-	0	-
182	Beaver, roasted	90	56	223	934	26	0	12	5	2	90	19	1.4	37	331	0	.07	.34	15.0	-	0	-	
183	Caribou, cooked	90	-	157	655	34	0	1	-	-	-	17	3.1	-	-	-	6	.10	.57	10.4	2	0	-
184	Hare or rabbit, cooked	90	-	194	813	26	0	9	-	-	-	19	1.4	-	-	-	0	.05	.06	15.3	-	0	-
185	Moose, cooked	90	-	158	663	31	0	3	-	-	-	9	3.0	-	-	-	52	.04	.30	10.1	-	0	-
186	Muskrat or porcupine, roasted	90	67	138	576	24	0	4	2	tr	90	19	1.4	37	331	27	.14	.19	14.7	-	0	-	-
187	Ptarmigan (Grouse), roasted, meat only	90	62	156	651	28	0	5	-	-	-	27	6.8	86	423	-	.29	.49	13.1	-	0	-	-
188	Seal, cooked	90	60	165	689	23	0	8	-	-	-	23	18.6	80	147	-	.14	.54	-	7	tr	-	-

Lentils, Nuts and Seeds

189	Common white, cooked, drained	250 mL	189	63	263	1100	18	47	1	tr	tr	0	170	7.0	11	1060	0	.22	.09	3.9	153	0	8.3
190	Lima, dry, cooked, drained	250 mL	199	70	228	954	15	41	1	tr	tr	0	34	4.7	4	1010	0	.32	.11	3.9	165	0	6.6
191	Red kidney, cooked, drained	250 mL	187	67	238	996	16	43	1	tr	tr	0	52	5.5	4	754	0	.30	.11	4.3	242	2	6.7
192	Chickpeas (Garbanzos), boiled, drained	250 mL	173	60	284	1188	15	47	4	tr	2	0	85	5.0	12	504	5	.20	.11	3.4	298	2	6.1
193	Lentils, cooked, drained	250 mL	209	70	243	1017	19	42	1	tr	tr	0	40	7.0	4	772	2	.35	.15	5.0	378	3	8.4
194	Soybeans, mature seeds, cooked, drained	250 mL	182	63	314	1314	30	18	16	2	9	0	185	9.3	2	936	2	.28	.52	8.1	98	3	8.0
195	Tofu (7 cm × 6 cm × 2 cm)	1 piece	89	85	68	285	7	2	4	tr	2	0	93	4.8	6	108	8	.07	.05	2.0	13	tr	tr
196	Peas, split, cooked	250 mL	207	69	244	1021	17	44	1	tr	tr	0	29	2.7	4	750	2	.39	.12	5.1	134	1	4.8
197	Almonds, shelled, whole	125 mL	75	4	442	1848	15	15	39	4	8	0	200	2.7	8	549	0	.16	.58	7.0	44	tr	5.4
198	Brazil nuts, raw	125 mL	74	3	485	2031	11	9	49	12	18	0	130	2.5	1	444	0	.74	.09	4.4	3	tr	-
199	Cashew nuts, roasted	125 mL	69	4	397	1663	11	20	33	7	6	0	28	2.8	12	366	0	.29	.12	4.1	47	0	-
200	Coconut, dried, sweetened, shredded	125 mL	49	13	245	1027	1	23	17	15	tr	0	7	9	128	165	0	.02	.01	.5	4	tr	-
201	Nuts, mixed, dry roasted, with peanuts	125 mL	72	2	428	1789	12	18	37	5	8	0	50	2.7	9	430	tr	.14	.14	6.6	36	tr	-

Food	Measure	Weight g	% Water	Energy kcal	Energy kJ	Protein g	Carbohydrates g	Fat g	SFA g	PUFA g	Cholesterol mg	Calcium mg	Iron mg	Sodium mg	Potassium mg	Vitamin A RE	Thiamin mg	Riboflavin mg	Niacin NE	Folate mcg	Vitamin C mg	Dietary Fibre g
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202	Nuts, mixed, dry roasted, with peanuts, salt added	125 mL	72	2	428	1789	12	18	37	5	8	0	50	2.7	482	430	tr	.14	.14	6.6	36	tr	-
203	Nuts, mixed, oil roasted, with peanuts, salt added	125 mL	75	2	463	1936	13	16	42	7	10	0	81	2.4	489	436	2	.37	.17	6.9	62	tr	-
204	Peanut butter	15 mL	16	1	95	396	5	3	8	1	2	0	5	.3	3	110	0	.02	.02	3.1	13	0	-
205	Peanut butter, salt added	15 mL	16	1	95	396	5	3	8	1	2	0	5	.3	75	110	0	.02	.02	3.1	13	0	-
206	Peanuts, oil roasted	125 mL	77	2	447	1869	21	14	38	5	12	0	66	1.5	12	541	0	.23	.08	15.6	81	0	6.2
207	Peanuts, oil roasted, salt added	125 mL	77	2	447	1868	21	14	38	5	12	0	66	1.5	333	541	0	.23	.08	15.6	81	0	6.2
208	Pecans, halves	125 mL	57	5	380	1591	4	10	39	3	10	0	21	1.2	tr	223	7	.48	.07	2.4	22	1	-
209	Pistachio nuts, dry roasted salt added	125 mL	68	2	412	1724	10	19	36	5	5	0	48	2.2	530	660	16	.29	.17	3.3	40	5	-
210	Walnuts, English, chopped	15 mL	6	4	39	161	tr	1	4	tr	2	0	6	.1	tr	30	tr	.02	tr	.3	4	tr	-
211	Walnuts, English, halves	125 mL	53	4	340	1424	8	10	33	3	21	0	50	1.3	5	266	6	.20	.08	2.2	35	2	-
212	Pumpkin and squash, seed kernels, dry	125 mL	73	7	395	1652	18	13	33	6	15	0	31	10.9	13	589	28	.15	.23	6.5	42	1	-
213	Sesame butter (tahini) from untoasted kernels	15 mL	14	3	85	356	3	3	8	1	3	-	20	.9	tr	64	tr	.22	.02	1.7	14	0	-
214	Sesame seeds, dry	125 mL	79	5	465	1944	21	7	43	6	19	0	103	6.2	32	322	6	.57	.07	9.9	76	0	-
215	Sunflower seed kernels, dry	125 mL	76	5	433	1813	17	14	38	4	25	0	88	5.1	2	524	4	1.74	.19	7.8	173	1	-

Vegetables, Related Products

216	Alfalfa seeds, sprouted with seed, raw	250 mL	35	91	10	42	1	1	tr	tr	tr	0	11	.3	2	28	6	.03	.04	.4	13	3	.8
217	Asparagus, boiled, drained pieces	250 mL	190	92	48	199	5	8	tr	tr	tr	0	46	1.3	8	589	158	.19	.23	2.8	186	51	2.9
218	Asparagus, boiled, drained spears 4 spears	60	92	15	63	2	3	tr	tr	tr	tr	0	14	.4	2	186	50	.06	.07	.9	59	16	.9
219	Asparagus, canned, drained pieces	250 mL	256	94	49	204	5	6	2	tr	tr	0	41	4.7	998	440	.136	.16	.26	3.3	245	47	3.8
220	Bamboo shoots, canned, drained solids	250 mL	138	94	26	110	2	4	tr	tr	tr	0	11	.4	10	110	1	.04	.04	.6	4	2	3.6
221	Bean sprouts, mung, boiled, drained	250 mL	131	93	28	115	3	5	tr	tr	tr	0	16	.9	13	132	1	.07	.13	1.7	38	15	1.4
222	Bean sprouts, mung, stir-fried	250 mL	131	84	66	274	6	14	tr	tr	tr	0	17	2.5	12	287	4	.18	.24	2.8	91	21	1.4
223	Beans, lima, boiled, drained	250 mL	180	67	221	926	12	43	tr	tr	tr	0	58	4.4	31	1026	67	.25	.17	4.5	47	18	9.5
224	Beans, snap, green, yellow or Italian, boiled, drained	250 mL	132	89	46	193	2	10	tr	tr	tr	0	61	1.7	4	395	88	.10	.13	1.3	44	13	3.4
225	Beans, snap, green, yellow or Italian, canned, drained	250 mL	144	93	29	120	2	6	tr	tr	tr	0	37	1.3	361	157	50	.02	.08	.6	46	7	3.7

Food	Measure	Weight	Water	Energy	Energy	Protein	Carbohydrates	Fat	SFA	PUFA	Cholesterol	Calcium	Iron	Sodium	Potassium	Vitamin A	Thiamin	Riboflavin	Niacin	Folate	Vitamin C	Dietary Fibre
		g	%	kcal	kJ	g	g	g	g	g	g	mg	mg	mg	mg	RE	mg	mg	NE	mcg	mg	g
226	Beans, snap, green, yellow or Italian, frozen, boiled, drained	250 mL	144	92	37	157	2	9	tr	tr	tr	0	65	1.2	19	161	76	.07	.11	.9	12	3.7
227	Beets, canned, sliced, drained	250 mL	180	91	56	233	2	13	tr	tr	tr	0	27	3.3	493	266	2	.02	.07	.6	54	7
228	Beets, diced or sliced, boiled or drained	250 mL	180	91	56	233	2	12	tr	tr	tr	0	20	1.1	88	562	2	.06	.03	.9	96	10
229	Beets, greens, boiled, drained	250 mL	152	89	41	172	4	8	tr	tr	tr	0	173	2.9	366	1382	775	.18	.44	1.8	22	38
230	Broccoli, frozen, chopped, boiled, drained	250 mL	194	91	54	227	6	10	tr	tr	tr	0	99	1.2	47	349	367	.11	.16	1.9	109	78
231	Broccoli, raw, medium size	1 spear	151	91	42	177	5	8	tr	tr	tr	0	72	1.3	41	491	233	.10	.18	1.7	107	141
232	Broccoli, spears, boiled, drained	250 mL	164	90	48	199	5	9	tr	tr	tr	0	187	1.9	18	267	231	.13	.34	2.1	112	103
233	Broccoli, spears, whole stock, boiled, drained, medium size	1 spear	180	90	52	218	5	10	tr	tr	tr	0	205	2.1	20	293	254	.15	.37	2.3	123	113
234	Brussels sprouts, boiled, drained	250 mL	165	87	64	269	4	14	tr	tr	tr	0	59	2.0	35	523	119	.18	.13	1.8	99	102
235	Brussels sprouts, frozen, boiled, drained	250 mL	165	87	69	290	6	14	tr	tr	tr	0	40	1.2	38	536	97	.17	.19	2.0	167	75
236	Cabbage, red, shredded, raw	250 mL	74	92	20	84	1	5	tr	tr	tr	0	38	.4	8	152	3	.04	.02	.4	15	42
237	Cabbage, shredded, boiled, drained	250 mL	158	94	33	139	2	8	tr	tr	tr	0	52	.6	30	324	14	.09	.09	.6	32	38
238	Cabbage, shredded, raw	250 mL	74	93	18	74	tr	4	tr	tr	tr	0	35	.4	13	182	10	.04	.02	.4	42	35
239	Carrots, boiled, drained	250 mL	165	87	74	311	2	17	tr	tr	tr	0	51	1.0	109	375	4051	.06	.09	1.2	23	4
240	Carrots, canned, drained	250 mL	154	93	35	148	tr	9	tr	tr	tr	0	39	1.0	371	276	2121	.03	.05	1.0	14	4
241	Carrots, frozen, boiled, drained	250 mL	154	90	55	232	2	13	tr	tr	tr	0	43	.7	91	243	2726	.04	.06	1.0	17	4
242	Carrots, raw (19 cm long)	1	72	88	31	130	tr	7	tr	tr	tr	0	19	.4	25	233	2025	.07	.04	.8	10	7
243	Carrots, raw, shredded	250 mL	116	88	50	209	1	12	tr	tr	tr	0	31	.6	41	375	3263	.11	.07	1.3	16	11
244	Cauliflower, boiled, drained	250 mL	131	93	31	132	2	6	tr	tr	tr	0	35	.6	8	423	1	.08	.07	1.3	67	73
245	Cauliflower, frozen, boiled, drained	250 mL	190	94	36	151	3	7	tr	tr	tr	0	32	.8	34	264	4	.07	.10	1.3	78	59
246	Cauliflower, raw	250 mL	106	92	25	106	2	5	tr	tr	tr	0	31	.6	16	376	2	.08	.06	1.1	70	76
247	Celery, diced, raw	250 mL	127	95	20	85	tr	5	tr	tr	tr	0	46	.6	112	361	17	.04	.04	.6	11	8
248	Celery, outer stalk, raw (19 cm long)	1 stalk	40	95	6	27	tr	1	tr	tr	tr	0	14	.2	35	114	5	.01	.01	.2	4	3
249	Celery, pieces, boiled, drained	250 mL	158	95	24	99	tr	6	tr	tr	tr	0	57	.2	101	559	17	.04	.05	.6	11	7
250	Chard, swiss, boiled, drained	250 mL	185	93	37	155	3	8	tr	0	0	0	107	4.2	331	1016	581	.06	.16	1.2	16	33
251	Coleslaw (cabbage salad)	250 mL	127	82	88	367	2	16	3	tr	2	10	57	.7	29	230	104	.08	.08	.7	34	42
252	Corn, sweet, boiled, drained kernels	1 ear	77	70	83	348	3	19	tr	tr	tr	0	2	.5	13	192	17	.17	.06	1.5	36	5
253	Corn, sweet, canned, cream style	250 mL	270	79	194	813	5	49	1	tr	tr	0	8	1.0	770	362	27	.07	.14	3.1	121	12
254	Corn, sweet, canned, kernels, drained	250 mL	173	77	140	586	5	32	2	tr	tr	0	9	1.5	559	337	28	.06	.14	2.6	84	15
255	Cucumber, raw, sliced	250 mL	111	96	14	60	tr	3	tr	tr	tr	0	16	.3	2	165	6	.03	.02	.4	15	5

Food	Measure	Weight g	Water %	Energy kcal	Energy kJ	Protein g	Carbohydrates g	Fat g	SFA g	PUFA g	Cholesterol mg	Calcium mg	Iron mg	Sodium mg	Potassium mg	Vitamin A RE	Thiamin mg	Riboflavin mg	Niacin NE	Folate mcg	Vitamin C mg	Dietary Fibre g	
256	Eggplant, cubed, boiled, drained	250 mL	101	92	28	118	tr	7	tr	tr	0	6	.4	3	250	6	.08	.02	.7	15	1	-	
257	Fiddlehead greens, frozen, cooked	250 mL	150	93	30	126	4	5	tr	-	0	8	1.2	2	332	-	.00	.38	-	-	14	-	
258	Lettuce, iceberg, raw	1 leaf	20	96	3	11	tr	tr	tr	tr	0	4	.1	2	32	7	tr	tr	tr	11	tr	.3	
259	Lettuce, looseleaf, shredded, raw	250 mL	59	94	11	44	tr	2	tr	tr	0	40	.8	5	156	112	.03	.05	.3	29	11	.9	
260	Mushrooms, boiled, drained	4 medium	48	91	13	55	1	2	tr	tr	0	3	.8	tr	171	0	.04	.14	2.5	9	2	1.2	
261	Mushrooms, canned, pieces, drained	250 mL	165	91	40	166	3	8	tr	tr	0	18	1.3	701	213	0	.14	.04	3.8	20	0	4.1	
262	Mushrooms, pieces, raw	250 mL	74	92	19	77	2	3	tr	tr	0	4	.9	3	274	0	.08	.33	3.6	16	3	1.9	
263	Olives, black	5 large	20	80	26	108	tr	tr	3	tr	0	17	.3	163	7	1	.00	.00	.0	-	0	-	
264	Olives, green	5 medium	20	78	23	97	tr	tr	3	tr	0	12	.3	480	11	6	.00	.00	.0	-	0	-	
265	Onion rings (breaded), frozen, heated in oven	5	50	29	204	851	3	19	13	4	3	0	16	.8	188	65	12	.14	.07	2.4	7	tr	-
266	Onions, chopped, boiled, drained	250 mL	222	92	62	260	2	14	tr	tr	0	60	.4	18	337	0	.09	.02	.7	28	13	2.9	
267	Onions, chopped, raw	250 mL	169	91	57	240	2	12	tr	tr	0	42	.6	3	262	0	.10	.02	.6	34	14	2.2	
268	Onions, frozen, chopped, boiled, drained	250 mL	222	92	62	260	2	15	tr	tr	0	36	.7	27	240	7	.05	.06	.7	30	6	2.9	
269	Onions, spring, chopped, raw	15 mL	6	92	2	6	tr	tr	tr	tr	0	4	.1	tr	15	30	tr	tr	tr	tr	3	-	
270	Parsley, chopped, raw	15 mL	4	88	1	6	tr	tr	tr	0	0	5	.2	2	21	21	tr	tr	tr	7	4	-	
271	Parsnips, boiled, drained slices	250 mL	165	78	134	559	2	32	tr	tr	0	61	1.0	17	606	0	.14	.08	1.6	96	21	5.8	
272	Peas, edible-podded (Snow peas), boiled, drained	250 mL	169	89	71	297	6	12	tr	tr	0	71	3.3	7	406	22	.22	.13	1.8	49	81	2.7	
273	Peas, edible-podded (Snow peas), raw	250 mL	153	89	64	269	4	12	tr	tr	0	66	3.2	6	306	21	.23	.12	1.6	64	92	2.9	
274	Peas, green, boiled, drained	250 mL	169	78	142	594	9	26	tr	tr	0	46	2.6	5	458	101	.44	.25	4.5	107	24	7.6	
275	Peas, green, canned, drained	250 mL	180	82	124	520	8	23	tr	tr	0	36	1.7	394	311	139	.22	.14	2.2	80	17	8.1	
276	Peas, green, frozen, boiled, drained	250 mL	169	80	132	552	9	24	tr	tr	0	41	2.7	147	284	113	.48	.17	3.5	99	17	7.6	
277	Peppers, hot, red, dried (chili) powder	15 mL	15	8	47	197	2	8	3	0	-	0	42	2.1	152	287	.524	.05	.12	1.3	-	10	-
278	Peppers, sweet, green, boiled, drained	1 pepper	73	95	13	55	tr	3	tr	tr	0	3	.6	1	94	28	.04	.03	.4	7	81	.9	
279	Peppers, sweet, green, raw	1 pepper	74	93	19	77	tr	4	tr	tr	0	4	.9	2	144	39	.06	.04	.5	13	95	1.0	
280	Pickles, assorted, sweet	1 piece	10	69	12	49	tr	3	tr	0	-	0	2	2	53	20	tr	.00	tr	.0	-	tr	-
281	Pickles, dill (10 cm long)	1 dill	136	93	15	63	tr	3	tr	0	-	0	35	1.4	1942	272	14	.00	.03	.0	-	8	-
282	Pickles, gherkins (7 cm long)	1 piece	20	61	29	122	tr	7	tr	0	-	0	2	2	142	40	2	.00	tr	.0	-	1	-
283	Pickles, relish, sweet	15 mL	9	63	12	52	tr	3	tr	0	-	0	2	tr	64	18	tr	.00	tr	.0	-	tr	-
284	Potato salad	250 mL	264	76	378	1580	7	29	22	4	10	180	50	1.7	1397	671	.87	.20	1.6	4.2	18	26	-
285	Potatoes, baked in skin, flesh and skin (12 cm long)	1	206	71	225	939	5	52	tr	tr	0	21	2.8	16	861	0	.22	.07	4.6	23	27	3.5	-

Food	Measure	Weight g	Water %	Energy kcal	Energy kJ	Protein g	Carbohydrates g	Fat g	SFA g	PUFA g	Cholesterol mg	Calcium mg	Iron mg	Sodium mg	Potassium mg	RE	Vitamin A mg	Thiamin mg	Riboflavin mg	Niacin NE	Folate mcg	Vitamin C mg	g	Dietary Fibre
286	Potatoes, baked in skin, flesh only (12 cm long)	1	159	75	148	619	3	34	tr	tr	tr	0	8	.6	8	622	0	.17	.03	3.0	14	20	1.6	
287	Potatoes, dehydrated flakes, prepared	250 mL	222	76	251	1050	4	33	12	8	tr	31	109	.5	737	517	47	.25	.11	2.2	16	22	-	
288	Potatoes, French fried cooked in deep fat	10 strips	50	38	158	659	2	20	8	3	tr	7	10	.4	108	366	0	.09	.01	2.1	15	5	-	
289	Potatoes, French fried frozen, heated	10 strips	50	53	111	464	2	17	4	2	tr	0	5	.7	16	229	0	.06	.02	1.5	8	5	.5	
290	Potatoes, hashed brown, home prepared	250 mL	165	75	252	1056	4	12	23	9	3	0	13	1.3	40	530	0	.12	.03	4.2	13	9	1.7	
291	Potatoes, mashed, milk and butter added	250 mL	222	76	235	985	4	37	9	2	3	4	58	.6	655	642	44	.19	.09	3.5	18	14	2.2	
292	Potatoes, microwaved, flesh and skin (12 cm long)	1	206	72	216	905	5	50	tr	tr	tr	0	23	2.6	16	921	0	.25	.07	4.8	25	31	3.5	
293	Potatoes, peeled before boiling (7 cm long)	1	135	77	116	486	2	27	tr	tr	tr	0	11	.4	7	443	0	.13	.03	2.4	12	10	1.4	
294	Potatoes, peeled after boiling (7 cm long)	1	136	77	118	495	3	27	tr	tr	tr	0	7	.4	5	515	0	.14	.03	2.6	14	18	1.4	
295	Potatoes, scalloped, dry mix, prepared	250 mL	259	79	241	1008	5	33	11	7	tr	-	93	1.0	883	526	54	.05	.15	3.7	25	9	-	
296	Pumpkin, canned	250 mL	259	90	88	368	3	21	tr	tr	tr	0	67	3.6	13	534	5714	.06	.14	1.5	32	11	-	
297	Radishes, raw, without tops	10	45	95	8	32	tr	2	tr	tr	tr	0	9	.1	11	104	tr	.02	.2	12	10	-		
298	Rutabagas, boiled, drained, cubed	250 mL	180	90	61	256	2	14	tr	tr	tr	0	76	.8	32	517	0	.13	.07	1.5	28	39	4.0	
299	Rutabagas, raw, cubed	250 mL	148	90	53	223	2	12	tr	tr	tr	0	70	.8	30	499	0	.13	.06	1.4	30	37	3.3	
300	Sauerkraut, canned, solids and liquids	250 mL	249	93	47	198	2	11	tr	tr	tr	0	75	3.7	1646	423	5	.05	.06	.8	59	37	-	
301	Spinach, boiled, drained	250 mL	190	91	44	183	6	7	tr	tr	tr	0	258	6.8	133	885	1556	.18	.45	2.2	277	19	4.4	
302	Spinach, chopped, raw	250 mL	59	92	13	54	2	2	tr	tr	tr	0	58	1.6	47	329	396	.05	.11	.8	115	17	2.4	
303	Spinach, frozen, boiled, drained	250 mL	201	90	56	235	6	11	tr	tr	tr	0	293	3.1	173	599	1564	.12	.34	2.2	216	25	4.6	
304	Squash, summer, zucchini, boiled, drained	250 mL	190	95	30	127	1	7	tr	tr	tr	0	25	.7	6	481	46	.08	.08	1.0	32	9	3.8	
305	Squash, winter, butternut, frozen, boiled	250 mL	254	88	99	414	3	26	tr	tr	tr	0	48	1.5	5	338	848	.13	.10	1.9	42	9	-	
306	Squash, winter, Hubbard, boiled, mashed	250 mL	249	91	75	313	4	16	tr	tr	tr	0	25	.7	12	533	998	.11	.07	1.7	24	16	-	
307	Squash, winter, baked, cubes	250 mL	217	89	85	354	2	19	1	tr	tr	0	30	.7	2	948	773	.18	.05	2.0	61	21	2.6	
308	Sweet potatoes, candied (7 cm long)	1 piece	112	67	153	642	tr	31	4	2	tr	9	29	1.3	78	212	469	.02	.05	.6	13	8	2.7	
309	Sweet potatoes, baked, peeled after baking (13 cm long)	1	114	73	117	491	2	28	tr	tr	tr	0	32	.5	11	397	2487	.08	.15	1.1	26	28	2.7	
310	Sweet potatoes, boiled without skin, mashed	250 mL	346	73	363	1520	6	84	1	tr	tr	0	73	1.9	45	637	5899	.18	.48	3.4	38	59	8.3	
311	Sweet potatoes, canned vacuum-packed, mashed	250 mL	269	76	245	1024	4	57	tr	tr	tr	0	59	2.4	143	839	2147	.10	.15	2.9	45	71	6.5	
312	Tomato juice, canned or bottled	250 mL	258	94	44	184	2	11	tr	tr	tr	0	23	1.5	931	568	144	.12	.08	2.0	51	47	-	
313	Tomato puree, canned	50 mL	53	87	22	91	tr	5	tr	tr	tr	0	8	.5	11	223	72	.04	.03	1.0	6	19	-	
314	Tomato sauce, canned	50 mL	52	89	16	65	tr	4	tr	tr	tr	0	7	.4	315	193	51	.03	.03	.7	5	7	-	
315	Tomatoes, canned, stewed	250 mL	269	91	70	293	3	17	tr	tr	tr	0	89	2.0	683	643	148	.12	.09	2.2	15	36	4.0	

Food	Measure	Weight g	Water %	Energy kcal	Energy kJ	Protein g	Carbohydrates g	Fat g	SFA g	PUFA g	Cholesterol mg	Calcium mg	Iron mg	Sodium mg	Potassium mg	Vitamin A RE	Thiamin mg	Riboflavin mg	Niacin NE	Folate mcg	Vitamin C mg	Dietary Fibre g
316	Tomatoes, canned, whole	250 mL	94	51	213	2	11	tr	tr	tr	0	66	1.5	414	561	152	.11	.08	2.2	20	38	3.8
317	Tomatoes, raw	1 medium	123	94	23	98	1	5	tr	tr	0	9	.6	10	255	139	.07	.06	.9	12	22	1.8
318	Turnips, boiled, drained, mashed	250 mL	243	94	44	183	2	12	tr	tr	0	53	.5	122	328	0	.07	.06	1.0	22	28	5.3
319	Turnips, raw, cubed	250 mL	137	92	37	155	1	9	tr	tr	0	41	.4	92	262	0	.06	.04	.8	20	29	3.0
320	Vegetable juice cocktail, canned	250 mL	256	94	49	204	2	12	tr	tr	0	28	1.1	934	494	300	.11	.07	2.2	54	71	—
321	Vegetables, mixed, canned, drained	250 mL	172	87	81	338	4	16	tr	tr	0	46	1.8	256	501	2004	.08	.08	1.7	41	9	4.1
322	Vegetables, mixed, frozen, boiled, drained	250 mL	172	83	101	425	5	23	tr	tr	0	43	1.4	60	291	736	.12	.21	2.3	33	6	4.0

Fruits, Related Products

323	Apple juice, canned or bottled, vitamin C added	250 mL	262	88	123	515	tr	31	tr	tr	0	18	1.0	8	312	0	.06	.05	.3	tr	87	.8
324	Apple sauce, canned, sweetened	250 mL	269	80	204	855	tr	54	tr	tr	0	11	.9	8	164	3	.04	.08	.6	2	5	3.8
325	Apple sauce, canned, unsweetened	250 mL	258	88	111	464	tr	29	tr	tr	0	8	.3	5	194	8	.03	.07	.6	2	3	3.6
326	Apples, raw, with skin medium size	1	138	84	81	341	tr	21	tr	tr	0	10	.2	0	159	7	.02	.02	.2	4	8	3.5
327	Apricot nectar, canned, vitamin C added	250 mL	265	85	148	621	tr	38	tr	tr	0	19	1.0	8	302	350	.02	.04	.9	3	88	.8
328	Apricots, canned, whole, heavy syrup, no skin	250 mL	273	78	227	948	1	59	tr	tr	0	25	1.2	30	366	339	.05	.06	1.5	5	8	—
329	Apricots, dried, cooked without sugar	250 mL	264	76	224	939	3	58	tr	tr	0	42	4.4	8	1291	623	.02	.08	3.5	0	4	—
330	Apricots, dried, uncooked	250 mL	137	31	326	1364	5	85	tr	tr	0	62	6.4	14	1888	992	.01	.21	5.6	14	3	11.1
331	Apricots, dried, uncooked	10 halves	35	31	83	349	1	22	tr	tr	0	16	1.6	4	482	253	.01	.05	1.4	4	tr	2.8
332	Apricots, raw	1 whole	36	86	17	72	tr	4	tr	tr	0	5	.2	tr	107	94	.01	.3	.3	4	6	—
333	Avocados, California, (winter), raw	1 whole	173	73	306	1281	4	12	30	4	4	0	19	2.0	21	1097	106	.19	.21	4.0	113	14
334	Avocados, Florida (summer/autumn), raw	1 whole	304	80	340	1423	5	27	27	5	5	0	33	1.6	15	1480	185	.33	.37	6.7	162	24
335	Bananas, raw (22 cm long)	1	114	74	105	439	1	27	tr	tr	0	7	.4	1	451	9	.05	.11	.8	22	10	2.4
336	Blackberries, raw	250 mL	152	86	79	331	1	19	tr	0	0	49	.9	0	298	24	.05	.06	.8	52	32	6.9
337	Blueberries, raw	250 mL	153	85	86	358	1	22	tr	0	0	9	.3	9	136	15	.07	.08	.6	10	20	4.1
338	Cantaloup, raw, medium size	½	267	90	93	391	2	22	tr	0	0	29	.6	24	825	860	.10	.06	2.0	45	113	2.7
339	Cherries, sour, red, canned, water-packed	250 mL	258	90	93	389	2	23	tr	tr	0	28	3.5	18	253	194	.04	.11	.8	21	5	—
340	Cherries, sweet, raw	250 mL	153	81	110	461	2	25	1	tr	tr	0	23	.6	0	343	32	.08	.09	.9	6	11
341	Cranberries, whole, raw	250 mL	100	87	49	205	tr	13	tr	0	—	0	7	.2	1	71	.5	.03	.02	.2	2	14
342	Cranberry juice, cocktail, bottled	250 mL	267	85	155	648	tr	40	tr	0	—	0	8	.4	11	64	0	.01	.04	.1	tr	60
343	Cranberry sauce, canned, sweetened	250 mL	293	61	442	1851	tr	114	tr	—	—	0	12	.6	85	76	.04	.06	.4	—	6	—

Food	Measure	Weight g	Water %	Energy kcal	Energy kJ	Protein g	Carbohydrates g	Fat g	SFA g	PUFA g	Cholesterol mg	Calcium mg	Iron mg	Sodium mg	Potassium mg	RE	Vitamin A mg	Thiamin mg	Riboflavin mg	Niacin NE	Folate mcg	Vitamin C mg	Dietary Fibre g
344	Dates, pitted, chopped	250 mL	188	23	517	2163	4	138	tr	0	0	60	2.2	6	1226	9	.17	.19	.57	.24	0	14.3	
345	Figs, dried, uncooked	1	19	28	48	203	tr	12	tr	tr	0	27	.4	2	135	2	.01	.02	.2	1	tr		
346	Fruit cocktail, canned, heavy syrup	250 mL	269	80	196	822	1	51	tr	tr	0	16	.8	16	237	54	.05	.05	.12	.7	5	1.6	
347	Fruit cocktail, canned, juice-packed	250 mL	262	87	121	504	1	31	tr	tr	0	21	.6	10	249	81	.03	.04	.13	.7	7	1.6	
348	Fruit cocktail, canned, water-packed	250 mL	259	91	83	347	1	22	tr	tr	0	13	.6	10	243	65	.04	.03	.11	.7	5	1.6	
349	Fruit salad, tropical, canned	250 mL	272	77	234	979	1	61	tr	-	0	35	1.4	5	356	35	.15	.12	1.7	-	48		
350	Grapefruit juice, canned, sweetened	250 mL	264	87	121	508	2	29	tr	tr	0	21	1.0	5	428	0	.11	.06	.11	.27	71	1.1	
351	Grapefruit juice, canned, unsweetened	250 mL	261	90	99	415	1	23	tr	tr	0	18	.5	3	399	3	.11	.05	.9	27	76	1.0	
352	Grapefruit juice, fresh	250 mL	261	90	102	426	1	24	tr	tr	0	23	.5	3	423	3	.10	.05	.8	27	99	-	
353	Grapefruit juice, frozen unsweetened, diluted	250 mL	261	89	107	448	1	25	tr	tr	0	21	.4	3	355	3	.11	.06	.8	9	88	-	
354	Grapefruit juice, frozen unsweetened, undiluted (355 mL can)	1 can	415	62	606	2535	8	143	2	tr	0	.112	2.0	12	2009	12	.60	.32	4.7	53	497	-	
355	Grapefruit, canned, syrup-packed	250 mL	268	84	161	673	2	41	tr	tr	0	38	1.1	5	346	0	.10	.05	.7	23	57	-	
356	Grapefruit, pink and red, raw	1/2	123	91	37	155	tr	9	tr	tr	0	14	.1	0	159	32	.04	.03	.3	15	47	1.6	
357	Grapefruit, white, raw	1/2	118	90	39	163	tr	10	tr	tr	0	14	tr	0	175	1	.04	.02	.4	12	39	1.5	
358	Grapes, Canadian type (slip skin), raw	10	24	81	15	63	tr	4	tr	tr	0	3	tr	tr	46	2	.02	.01	tr	tr	tr	.3	
359	Grapes, European type (adherent skin), raw	250 mL	169	81	120	502	1	30	tr	tr	0	19	.4	3	313	12	.16	.10	.6	7	18	2.2	
360	Grapes, juice, canned or bottled	250 mL	267	84	163	681	1	40	tr	tr	0	24	.6	8	352	3	.07	.10	1.0	7	tr	1.3	
361	Grapes, juice, frozen, sweetened diluted, vitamin C added	250 mL	264	87	135	563	tr	34	tr	tr	0	11	.3	5	55	3	.04	.07	.4	3	40	tr	
362	Grapes, juice, frozen, sweetened undiluted, vitamin C added (170 mL can)	1 can	207	54	371	1550	1	92	tr	tr	0	27	.7	14	153	6	.11	.19	1.1	9	124	.2	
363	Honeydew melon, raw	1/10	129	90	45	189	tr	12	tr	0	0	8	tr	13	350	5	.10	.02	.9	39	32	-	
364	Kiwifruit, raw	1 large	91	83	56	232	tr	14	tr	-	0	24	.4	5	302	16	.02	.05	.6	-	68	-	
365	Lemon juice, canned or bottled, unsweetened	250 mL	258	92	54	227	1	17	tr	tr	0	28	.3	54	263	5	.11	.02	.7	26	64	-	
366	Lemon juice, fresh	250 mL	258	91	65	270	tr	22	0	0	0	18	tr	3	320	5	.08	.03	.4	33	119	-	
367	Lemon, raw, without peel, medium size	1	84	89	24	102	tr	8	tr	tr	0	22	.5	2	116	3	.03	.02	.3	9	45	-	
368	Lemonade, frozen concentrate, diluted	250 mL	262	89	115	482	tr	30	0	0	0	3	.0	0	42	-	.01	.02	.2	12	18	-	
369	Lemonade, frozen concentrate undiluted (355 mL can)	1 can	440	49	858	3590	tr	225	tr	0	0	18	.9	9	308	9	.10	.11	1.5	62	132	-	
370	Lime juice, canned or bottled, unsweetened	250 mL	260	93	55	228	tr	17	tr	tr	0	31	.6	42	195	5	.09	tr	.5	21	17	-	
371	Lime juice, fresh	250 mL	260	90	70	294	1	23	tr	tr	0	23	tr	3	283	3	.05	.03	.5	21	76	-	

Food	Measure	Weight g	Water %	Energy kcal	Energy kJ	Protein g	Carbohydrates g	Fat g	SFA g	PUFA g	Cholesterol mg	Calcium mg	Iron mg	Sodium mg	Potassium mg	RE	Thiamin mg	Riboflavin mg	Niacin NE	Folate mcg	Vitamin C mg	Dietary Fibre g	
372	Mangos, raw, peeled	1	176	82	114	479	tr	30	tr	tr	tr	0	18	2	4	275	685	.10	.10	1.3	-	49	1.9
373	Nectarine, raw, peeled, medium size	1	136	86	67	279	1	16	tr	0	-	0	7	2	0	288	101	.02	.06	1.6	5	7	-
374	Orange juice, canned	250 mL	263	89	110	462	2	26	tr	tr	tr	0	21	1.2	5	460	47	.16	.07	.9	48	90	1.1
375	Orange juice, fresh	250 mL	262	88	118	493	2	27	tr	tr	tr	0	29	.5	3	524	52	.24	.08	1.1	79	131	1.0
376	Orange juice, frozen concentrate, diluted	250 mL	263	88	118	495	2	28	tr	tr	tr	0	24	.3	3	500	21	.21	.05	.6	115	102	-
377	Orange juice, frozen concentrate, undiluted (170 mL can)	1 can	205	58	326	1364	5	78	tr	tr	tr	0	66	.7	6	1382	57	.57	.13	1.7	318	283	-
378	Orange-grapefruit juice, canned	250 mL	261	89	112	470	2	27	tr	tr	tr	0	21	1.2	8	412	31	.15	.08	1.2	37	76	-
379	Oranges, raw, peeled, medium size	1	131	87	62	258	1	15	tr	tr	tr	0	52	.1	0	237	28	.11	.05	.6	40	70	2.6
380	Papayas, raw, peeled (9cm diam × 13cm)	1	311	89	121	507	2	31	tr	tr	tr	0	75	.3	9	799	625	.08	.10	1.5	-	192	2.8
381	Peaches, canned halves or slices, heavy syrup	250 mL	270	79	200	836	1	54	tr	tr	tr	0	8	.7	16	248	89	.03	.07	1.7	9	8	1.4
382	Peaches, canned halves or slices, juice-packed	250 mL	262	87	115	482	2	30	tr	tr	tr	0	16	.7	10	335	100	.02	.05	1.6	9	9	1.2
383	Peaches, canned halves or slices, water-packed	250 mL	258	93	62	259	1	16	tr	tr	tr	0	5	.8	8	255	137	.02	.05	1.4	9	7	1.3
384	Peaches, dried halves, cooked, no added sugar	250 mL	273	78	210	880	3	54	tr	tr	tr	0	25	3.6	5	874	55	.01	.06	4.3	tr	10	-
385	Peaches, dried halves, uncooked	250 mL	169	32	404	1690	6	104	1	tr	tr	0	47	6.9	12	1683	365	tr	.36	7.7	tr	8	-
386	Peaches, frozen, sliced, sweetened	1 carton	340	75	320	1337	2	82	tr	tr	tr	0	10	1.3	20	442	95	.04	.12	2.3	11	320	4.8
387	Peaches, raw, pared, whole, medium size	1	87	88	37	157	tr	10	tr	tr	tr	0	4	tr	0	171	47	.02	.04	.9	3	6	1.2
388	Peaches, raw, pared, sliced	250 mL	180	88	77	324	1	20	tr	tr	tr	0	9	2	0	355	97	.03	.07	1.8	6	12	2.5
389	Pears, canned halves or slices, heavy syrup	250 mL	269	80	199	833	tr	52	tr	tr	tr	0	13	.6	13	175	0	.03	.06	.7	3	3	4.8
390	Pears, canned halves, juice-packed	250 mL	262	86	131	548	tr	34	tr	tr	tr	0	24	.8	10	252	3	.03	.03	.7	3	4	4.8
391	Pears, raw, with skin, medium size	1	169	84	100	417	tr	26	tr	tr	tr	0	19	.4	0	211	3	.03	.07	.3	12	7	4.7
392	Pineapple juice, canned, vitamin C added	250 mL	264	86	148	619	tr	36	tr	tr	tr	0	45	.7	3	354	0	.15	.06	.8	61	87	-
393	Pineapple, canned cubes, water-packed	250 mL	260	91	83	348	1	22	tr	tr	tr	0	39	1.0	3	330	5	.24	.07	1.0	12	20	-
394	Pineapple, canned, heavy syrup, sliced (8 cm diam.)	1 slice	64	79	50	209	tr	13	tr	tr	tr	0	9	.2	tr	67	tr	.06	.02	.2	3	5	-
395	Pineapple, canned, heavy syrup, crushed	250 mL	269	79	210	878	tr	54	tr	tr	tr	0	38	1.0	3	280	3	.24	.07	1.0	12	20	-
396	Pineapple, raw, diced	250 mL	164	87	80	336	tr	20	tr	tr	tr	0	11	.6	2	185	3	.15	.06	.8	17	25	2.3
397	Plums, purple, canned, heavy syrup	250 mL	273	76	243	1017	tr	63	tr	tr	tr	0	25	2.3	52	248	71	.04	.10	1.0	7	1	-
398	Plums, raw, medium size	1	66	85	36	152	tr	9	tr	tr	tr	0	3	tr	0	114	21	.03	.06	.4	1	6	1.1

Food	Measure	Weight g	Water %	Energy kcal	Energy kJ	Protein g	Carbohydrates g	Fat g	SFA g	PUFA g	Cholesterol mg	Calcium mg	Iron mg	Sodium mg	Potassium mg	Vitamin A RE	Thiamin mg	Riboflavin mg	Niacin NE	Folate mcg	Vitamin C mg	Dietary Fibre g	
399	Prune juice, canned or bottled	250 mL	270	81	192	802	2	47	tr	tr	tr	0	32	3.2	11	745	0	.04	.19	2.4	1	11	-
400	Prunes, dried, uncooked	10	84	32	201	840	2	53	tr	tr	tr	0	43	2.1	3	626	167	.07	.14	2.0	3	3	10.0
401	Prunes, dried, cooked, without added sugar	250 mL	224	70	240	1003	3	63	tr	tr	tr	0	52	2.5	4	748	69	.05	.22	2.1	tr	6	-
402	Raisins, seedless	250 mL	174	15	522	2184	6	138	tr	tr	tr	0	85	3.6	21	1307	2	.27	.15	2.5	6	6	15.1
403	Raspberries, frozen, sweetened	250 mL	264	73	272	1138	2	69	tr	tr	tr	0	40	1.7	3	301	16	.05	.12	.9	69	44	13.5
404	Raspberries, raw	250 mL	130	87	64	267	1	15	tr	tr	tr	0	29	.7	0	198	17	.04	.12	1.4	34	33	6.6
405	Rhubarb, frozen, cooked with added sugar	250 mL	254	68	295	1233	tr	79	tr	0	0	368	.5	3	244	18	.05	.06	.7	13	8	2.5	
406	Rhubarb, raw, diced	250 mL	129	94	27	113	1	6	tr	0	0	111	.3	5	372	13	.03	.04	.6	9	10	-	
407	Strawberries, frozen, sweetened, sliced	250 mL	269	73	258	1080	1	70	tr	tr	tr	0	30	1.6	8	264	5	.04	.14	1.3	40	111	5.4
408	Strawberries, frozen, sweetened, whole	250 mL	269	78	210	878	1	56	tr	tr	tr	0	30	1.3	3	264	8	.04	.21	1.1	10	106	5.4
409	Strawberries, frozen, unsweetened	250 mL	157	90	55	230	tr	14	tr	tr	tr	0	25	1.2	3	232	6	.04	.06	.9	26	65	3.1
410	Strawberries, raw, hulled	250 mL	157	92	47	197	tr	11	tr	tr	tr	0	22	.6	2	261	5	.03	.10	.5	28	89	3.1
411	Tangerines (mandarins) raw, medium size	1	84	88	37	155	tr	9	tr	tr	tr	0	12	tr	tr	132	77	.09	.02	.2	17	26	-
412	Tangerines (mandarins) canned, light syrup	250 mL	266	83	162	679	1	43	tr	tr	tr	0	19	1.0	16	207	223	.14	.12	1.4	12	53	-
413	Watermelon, raw (25cm diam. × 2cm)	1 slice	368	92	118	493	2	26	2	0	0	29	.6	7	427	136	.29	.07	1.2	8	35	1.1	
414	Fruit-flavoured drinks, canned or bottled, vitamin C added	250 mL	262	88	123	515	0	31	0	0	0	21	.5	58	65	3	.06	.06	tr	3	60	tr	
415	Fruit-flavoured drinks, crystals, water and vitamin C added	250 mL	276	90	102	427	0	26	0	0	0	44	.1	39	3	0	.00	tr	tr	tr	60	.0	

**Bread,
Cereals,
Related Products**

Biscuits and Crackers	416	Biscuits, baking powder (5cm × 3cm)	1	28	27	103	432	2	13	5	1	1	tr	34	.6	175	33	0	.06	.06	1.0	3	tr
	417	Crackers, cheese	4 round	14	4	67	281	2	8	3	1	tr	4	47	.4	145	15	.04	.04	.7	2	0	
	418	Crackers, graham	4 squares	28	6	108	450	2	21	3	tr	tr	0	11	.9	188	108	0	.03	.13	1.2	5	0
	419	Crackers, saltines (soda)	4 squares	11	4	48	199	tr	8	1	tr	tr	0	2	.5	121	13	0	.04	.03	.6	2	0
	420	Crackers, snack type	1 round	3	3	15	63	tr	tr	1	tr	tr	0	3	tr	30	4	0	tr	tr	.1	-	0
	421	Crackers, wheat thin	4	8	3	35	146	1	5	1	tr	tr	0	3	.3	69	17	0	.03	.02	.5	-	0
	422	Crackers, whole wheat wafers	2	8	4	35	146	1	5	2	tr	tr	0	3	2	59	31	0	.02	.03	.6	-	0

Food	Measure	Weight	Water	Energy	Energy	Protein	Carbohydrates	Fat	SFA	PUFA	Cholesterol	Calcium	Iron	Sodium	Potassium	Vitamin A	Thiamin	Riboflavin	Niacin	Folate	Vitamin C	Dietary Fibre	
Breads, Rolls and Buns	423 Bagels (9 cm diam.)	1	68	29	200	837	7	38	2	tr	tr	0	29	1.6	245	50	0	.19	.16	3.3	-	0	.7
	424 Bread, cracked wheat	1 slice	25	35	66	275	2	13	tr	tr	tr	tr	22	.6	132	34	0	.06	.05	1.1	11	0	1.0
	425 Bread, French or Vienna	1	20	31	58	243	2	11	tr	tr	tr	tr	9	.5	116	18	0	.06	.04	.9	7	0	.4
	426 Bread, Italian	1 slice	30	32	83	346	3	17	tr	0	0	tr	5	.8	176	22	0	.09	.05	1.3	11	0	.3
	427 Bread, melba toast	1 piece	4	5	16	68	tr	3	tr	-	-	-	5	.1	29	6	0	tr	.01	.1	1	0	-
	428 Bread, mixed grain	1 slice	25	37	65	272	2	12	tr	tr	tr	0	27	.7	106	56	0	.07	.07	1.2	-	0	.9
	429 Bread, oatmeal	1 slice	25	37	65	272	2	12	1	tr	tr	0	15	.6	124	39	0	.09	.05	1.1	-	0	.6
	430 Bread, pita (16.5 cm diam.)	1	60	31	165	690	6	33	1	tr	tr	0	49	1.3	339	71	0	.20	.09	2.9	-	0	.5
	431 Bread, raisin	1 slice	25	35	66	274	2	13	tr	tr	tr	tr	18	.7	91	58	0	.07	.05	.8	9	0	.6
	432 Bread, rye, dark, pumpernickel	1 slice	32	34	79	329	3	17	tr	tr	tr	tr	27	.8	182	145	0	.07	.05	1.0	7	0	1.0
	433 Bread, rye, light	1 slice	25	36	61	254	2	13	tr	tr	tr	tr	19	.6	139	36	0	.06	.04	1.0	6	0	-
	434 Bread, white	1 slice	28	36	76	316	2	14	tr	tr	tr	tr	24	.7	142	29	0	.08	.05	1.2	10	0	.4
	435 Bread, white, calcium carbonate added to flour	1 slice	28	36	76	316	2	14	tr	tr	tr	tr	46	.7	142	29	0	.08	.05	1.2	10	0	.4
	436 Bread, whole wheat (100% whole wheat)	1 slice	25	36	61	254	3	12	tr	tr	tr	tr	25	.8	132	68	0	.06	.03	1.2	14	0	1.4
	437 Bread, whole wheat (60% whole wheat)	1 slice	25	36	63	262	2	12	1	tr	0	1	23	.8	133	69	0	.07	.05	1.1	12	0	-
	438 Breadcrumbs, white bread, dry	250 mL	106	7	416	1739	13	78	5	1	1	5	129	3.8	780	161	0	.28	.29	6.6	38	0	-
	439 Buns, hamburger	1 bun	60	31	179	748	5	32	3	tr	tr	4	44	1.5	304	57	0	.17	.11	2.5	21	0	-
	440 Buns, hot dog	1 bun	50	31	149	623	4	27	3	tr	tr	3	37	1.3	253	48	0	.15	.10	2.1	18	0	-
	441 Croissants	1	57	22	235	983	5	27	12	4	1	13	20	1.9	452	68	13	.13	.10	2.0	-	0	-
	442 English muffins	1	57	42	140	586	5	27	1	tr	tr	0	96	1.5	378	331	0	.19	.14	2.7	-	0	-
	443 English muffins, toasted	1	50	29	140	586	5	27	1	tr	tr	0	96	1.5	378	331	0	.17	.15	2.7	-	0	-
	444 Rolls, commercial, hard	1 round	50	25	156	653	5	30	2	tr	tr	2	24	1.3	313	49	0	.15	.09	2.3	18	0	-
	445 Tortillas, corn	1 tortilla	30	45	65	272	2	13	1	tr	tr	0	42	.6	1	43	8	.05	.03	.8	-	0	-
Breakfast Cereals	446 Bran flakes with raisins	200 mL	42	10	133	557	3	32	tr	-	-	0	18	5.6	284	221	0	.84	.00	3.1	25	0	3.7
	447 Bran flakes, whole wheat	200 mL	40	5	139	580	4	32	tr	-	-	0	1	5.3	291	175	4	.80	.04	2.7	24	0	3.9
	448 Bran, all bran	125 mL	45	4	113	474	5	34	tr	-	-	0	38	6.0	410	475	0	.90	.09	7.7	43	0	13.2
	449 Bran, bran buds	125 mL	44	3	122	512	5	34	tr	-	-	0	36	5.9	221	400	0	.88	.09	6.6	38	0	10.7
	450 Bran, 100%	125 mL	35	3	90	376	4	29	tr	tr	tr	0	27	4.7	-	437	0	.70	.13	8.9	25	0	9.9
	451 Corn bran	200 mL	30	2	118	492	2	26	1	-	-	0	23	4.0	259	66	0	.60	.01	1.8	18	0	6.1
	452 Corn flakes, plain	200 mL	19	4	70	293	1	16	tr	-	-	0	tr	2.5	185	21	0	.38	tr	1.2	11	0	tr
	453 Corn flakes, sugar coated (Frosted Flakes)	200 mL	30	3	114	476	1	27	tr	-	-	0	tr	4.0	171	23	0	.60	tr	1.7	18	0	.1
	454 Corn and oats, (Cap'n Crunch)	250 mL	39	2	154	645	2	31	2	2	tr	0	6	5.2	289	39	0	.78	.01	2.1	23	0	.6

Food	Measure	Weight	Water	Energy	Energy	Protein	Carbohydrates	Fat	SFA	PUFA	Cholesterol	Calcium	Iron	Sodium	Potassium	Vitamin A	Thiamin	Riboflavin	Niacin	Folate	Vitamin C	Dietary Fibre
	g	%	kcal	kJ	g	g	g	g	g	g	mg	mg	mg	mg	mg	RE	mg	mg	NE	mcg	mg	g

455	Corn and wheat, oats, (Froot Loops)	200 mL	24	3	93	391	1	21	tr	-	-	0	2	3.2	98	28	0	.48	tr	1.4	14	0	.3
456	Corn, puffed, presweetened, (Sugar Corn Pops)	250 mL	30	4	114	477	1	27	tr	-	-	0	2	4.0	122	23	0	.60	-	1.7	18	0	.2
457	Granola, homemade	125 mL	64	3	312	1304	8	35	17	3	9	0	40	2.5	6	321	2	.38	.16	2.7	52	tr	-
458	Oatmeal, regular or quick cooking, cooked	125 mL	124	85	77	322	3	13	1	tr	tr	0	10	.8	1	69	2	.14	.03	.9	5	0	1.1
459	Oatmeal, regular or quick cooking, dry	125 mL	43	9	165	691	7	29	3	tr	1	0	22	1.8	2	151	4	.31	.06	1.9	14	0	2.6
460	Oatmeal, ready to serve, dry	1 pouch	32	9	120	503	4	21	2	tr	-	0	17	4.5	323	113	3	.70	.05	8.0	10	tr	1.5
461	Oats and marshmallows, (Lucky Charms)	250 mL	34	3	134	562	2	29	tr	tr	tr	0	0	4.5	163	61	0	-	.03	2.2	20	0	.6
462	Oats, puffed, (Cheerios)	250 mL	24	7	92	387	3	17	2	tr	tr	0	28	3.2	214	86	0	.02	.02	1.9	14	0	.8
463	Oats, puffed, presweetened, (Alpha-Bits)	250 mL	30	2	118	494	2	26	tr	-	-	0	tr	4.0	12	47	2	.60	.05	1.9	18	0	.5
464	Red River, cooked	125 mL	125	-	82	345	3	16	tr	-	-	0	-	.4	7	-	0	.04	tr	1.1	13	0	2.4
465	Rice Flakes	200 mL	27	5	103	432	2	24	tr	-	-	0	8	3.6	-	-	0	.54	.02	1.6	16	0	.0
466	Rice Krispies	250 mL	30	4	112	467	2	25	tr	-	-	0	4	4.0	312	37	0	.60	tr	1.8	18	0	.1
467	Rice and wheat, (Special K)	250 mL	22	4	82	343	4	16	tr	-	-	tr	9	2.9	190	35	0	.44	-	1.9	13	0	.2
468	Rice, puffed	250 mL	15	2	59	245	tr	14	tr	-	-	0	1	tr	1	17	0	tr	.01	.5	1	0	tr
469	Wheat, flakes, (Grapenuts)	200 mL	27	6	97	407	3	22	tr	-	-	0	tr	3.6	128	85	1	.54	.02	2.1	16	0	1.7
470	Wheat, flakes, (Wheaties)	200 mL	24	5	86	360	3	20	tr	tr	tr	0	0	3.2	187	97	0	.48	.00	2.0	14	0	1.7
471	Wheat, puffed	250 mL	13	2	50	209	2	10	tr	-	-	0	3	.5	tr	46	0	.01	.03	1.2	3	0	.6
472	Wheat, puffed, presweetened (Sugar Crisp)	250 mL	35	4	132	552	3	30	tr	-	-	0	1	.8	40	65	tr	.70	.06	2.4	21	0	.8
473	Wheat, to be cooked, enriched, cooked	125 mL	133	87	68	285	2	15	tr	-	-	0	3	8.0	1	23	0	.01	.01	.5	4	0	.4
474	Wheat, whole, (Shredded wheat)	1 biscuit	25	6	95	396	3	21	tr	-	-	0	10	.8	2	85	0	.07	.07	2.0	10	0	2.4
475	Wheat, whole, (Shreddies)	200 mL	44	5	169	707	4	37	tr	-	-	0	16	5.9	-	-	0	.88	.07	2.9	26	0	3.2

Cakes

476	Cake from mix: Angelfood	1 piece	53	34	137	573	3	31	tr	0	0	0	50	.3	77	32	0	.02	.06	.8	3	0
477	Cupcakes (1/2 of 25 cm diam. cake)	1	33	26	116	483	2	18	4	1	tr	20	53	.5	149	28	15	.05	.05	.7	3	tr
478	Gingerbread	1 piece	63	37	174	728	2	32	4	1	tr	tr	57	1.1	192	173	0	.07	.09	1.0	4	tr
479	Coffee cake	1/4 of cake	72	30	232	970	5	38	7	2	2	47	44	1.1	310	79	32	.10	.12	1.9	-	tr
480	Devil's Food with icing (1/4 of 23 cm diam. cake)	1 piece	69	24	234	979	3	40	8	3	1	33	41	1.2	181	90	31	.06	.08	1.0	4	tr
481	White layer with chocolate icing (1/4 of 23 cm diam. cake)	1 piece	71	21	249	1043	3	45	8	3	1	1	70	.8	161	82	13	.06	.09	1.1	3	tr

Food	Measure	Weight	Water	Energy	Energy	Protein	Carbohydrates	Fat	SFA	PUFA	Cholesterol	Calcium	Iron	Sodium	Potassium	Vitamin A	Thiamin	Riboflavin	Niacin	Folate	Vitamin C	Dietary Fibre
		g	%	kcal	kJ	g	g	g	g	g	mg	mg	mg	mg	mg	RE	mg	mg	NE	mcg	mg	g

Cake, Home Recipe:																						
482	Boston Cream Pie (1/2 of 20 cm diam. cake)	1 piece	69	35	208	872	3	34	6	2	1	59	46	8	128	61	43	07	08	1.2	6	tr
		1/8 cake	60	23	241	1009	2	30	13	3	4	46	28	7	175	67	10	05	06	9	—	tr
484	Fruitcake, dark (4 cm x 7.5 cm x 2 cm)	1 slice	60	18	227	951	3	36	9	2	2	27	43	1.5	95	298	22	07	07	1.1	7	tr
		Pound cake (9 cm x 8cm x 1 cm)	1 slice	30	17	142	594	2	14	9	2	2	44	6	5	33	18	25	04	04	6	3
486	Sponge (1/2 of 22 cm diam. cake)	1 piece	44	32	131	547	3	24	3	tr	tr	108	13	8	73	38	59	04	07	9	6	0
		White with boiled white icing (8 cm x 9 cm x 5 cm)	1 piece	114	23	401	1679	4	70	12	3	2	56	56	1.1	299	73	44	10	13	1.7	8
488	White plain (8 cm x 8 cm x 5 cm)	1 piece	86	25	313	1310	4	48	12	3	2	56	55	1.1	258	68	44	10	12	1.6	7	tr
		Yellow layer with chocolate icing (1/6 of 23 cm diam. cake)	1 piece	75	21	274	1145	3	45	10	3	1	33	51	1.0	156	81	36	08	10	1.3	5
490	Yellow layer, no icing (1/6 of 23 cm diam. cake)	1 piece	54	24	196	820	2	31	7	2	1	29	38	8	139	42	24	07	08	1.1	5	tr
		Cheesecake (1/2 of 23 cm diam. cake)	1 piece	92	46	278	1162	5	26	18	10	—	170	52	4	204	90	69	02	09	1.3	—
492	Brownies with nuts, home recipe	1 brownie	20	10	97	406	1	10	6	1	1	17	8	4	50	38	12	03	02	4	2	0
		2 cookies	22	3	104	434	1	15	5	1	1	9	9	6	88	29	8	03	03	5	2	0
494	Chocolate chip, home recipe (6 cm diam.)	2 cookies	20	3	103	432	1	12	6	2	1	10	7	4	70	23	7	02	02	4	2	0
		1 biscuit	17	10	70	291	tr	12	2	1	tr	13	4	2	36	15	13	02	02	3	2	tr
496	Chocolate marshmallow (Mallovs) Fig bars	2 bars	28	14	100	419	1	21	2	tr	tr	11	22	6	71	55	9	04	04	6	3	0
		2 cookies	26	3	117	491	2	19	4	1	tr	10	5	7	42	96	4	06	04	7	5	tr
498	Peanut butter, home recipe	2 cookies	24	3	123	513	2	14	7	2	1	11	11	5	71	55	3	03	03	1.1	—	0
		2 round	20	2	99	414	tr	14	5	1	tr	8	5	4	97	8	0	03	03	5	1	0
500	Sandwich, chocolate or vanilla, commercial	2 large	28	3	139	583	2	18	6	2	1	11	20	8	17	18	7	09	06	1.1	2	0
		2 large	28	3	145	607	2	17	8	1	3	0	6	5	125	18	89	06	05	9	—	0
502	Shortbread, home recipe (margarine)	2 biscuits	13	6	57	240	tr	9	2	tr	tr	tr	4	3	48	20	0	05	04	8	1	tr
		2 cookies	24	4	118	492	1	16	6	1	2	15	25	4	131	17	6	03	02	6	—	0
504	Sugar, from refrigerated dough	5 cookies	20	4	93	387	1	15	4	tr	tr	13	8	3	75	25	7	03	04	6	—	0
		Vanilla wafers	125 mL	106	11	370	1548	9	84	1	tr	tr	0	17	2.1	3	170	0	13	05	4.9	21
506	Barley, pearled, light, uncooked	250 mL	185	10	655	2740	21	140	3	1	1	0	54	6.8	7	424	0	52	26	12.1	78	0
		Bulgur	250 mL	148	11	266	1115	7	119	2	tr	tr	0	521	6.0	25	1348	tr	07	2.4	—	0
508	Carob, flour	125 mL	73	12	266	1112	6	57	tr	tr	tr	0	4	8	tr	88	96	10	04	1.8	16	0
		Cornmeal, degermed, dry form																				

*Salt added according to manufacturers' instructions.

Food	Measure	Weight g	Water %	Energy kcal	Energy kJ	Protein g	Carbohydrates g	Fat g	SFA g	PUFA g	Cholesterol mg	Calcium mg	Iron mg	Sodium mg	Potassium mg	Vitamin A RE	Thiamin mg	Riboflavin mg	Niacin NE	Folate mcg	Vitamin C mg	Dietary Fibre g	
509	Cornstarch	125 mL	68	12	246	1030	tr	60	0	0	0	0	0	0	0	0	0.00	0.00	0	—	0	—	
510	Potato flour	250 mL	189	8	664	2778	15	151	2	tr	1	0	62	3.3	64	337	0	7.9	27	10.6	96	36	—
511	Rice, brown, cooked	250 mL	180	70	214	896	5	46	1	tr	tr	0	22	.9	508*	126	0	.16	.04	3.3	17	0	2.2
512	Rice, white, short grain, cooked	250 mL	185	73	202	844	4	45	tr	tr	tr	0	19	.4	692*	52	0	.04	.02	1.4	16	0	.6
513	Rice, white, short grain, raw	250 mL	211	12	766	3205	14	170	tr	tr	tr	0	51	1.7	11	194	0	.15	.06	6.0	61	0	—
514	Rice, white, instant, ready-to-serve, cooked, with butter and salt	250 mL	209	73	255	1069	4	50	4	tr	tr	0	4	2	458*	107	30	.02	.02	1.0	4	0	.0
515	Rice, white, long-grain, parboiled, cooked	250 mL	169	73	179	750	4	39	tr	tr	tr	0	32	.3	605*	73	0	0.3	.02	1.4	14	0	.5
516	Rye, flour, light	250 mL	100	11	357	1494	9	78	1	tr	tr	0	22	1.1	1	156	0	.15	.07	2.3	78	0	4.5
517	Soybean, flour, defatted	250 mL	106	8	346	1446	50	40	tr	0	0	0	281	11.8	1	1929	4	1.16	.36	11.9	403	0	—
518	Wheat bran	15 mL	3	12	6	27	tr	2	tr	tr	tr	0	4	.4	tr	34	0	.02	.01	.7	4	0	1.2
519	Wheat germ	15 mL	7	12	25	106	2	3	tr	tr	tr	0	5	.7	tr	58	0	.14	.05	.6	15	0	—
520	Wheat, flour, all purpose	250 mL	133	12	484	2026	14	101	1	tr	tr	0	21	5.2	3	126	0	.63	.40	8.4	28	0	3.9
521	Wheat, flour, all purpose, calcium carbonate	250 mL	133	12	484	2026	14	101	1	tr	tr	0	166	5.2	3	126	0	.63	.40	8.4	28	0	3.9
522	Wheat, flour, cake	250 mL	114	12	415	1736	9	91	1	tr	tr	0	19	4.4	2	108	0	.54	.34	6.6	24	0	3.3
523	Wheat, flour, whole	250 mL	127	12	423	1769	17	90	3	tr	1	0	52	4.2	4	470	0	.70	.15	8.6	54	0	11.3
524	Blueberry, home recipe, medium size	1	40	39	112	470	3	17	4	1	tr	33	34	.8	253	46	26	.06	.08	1.2	4	tr	—
525	Bran, home recipe, medium size	1	40	35	104	437	3	17	4	1	tr	41	57	1.4	179	172	28	.05	.08	2.0	3	tr	—
526	Corn, made from mix with milk and eggs, medium size	1	40	30	130	542	3	20	4	1	tr	23	96	.7	192	44	29	.06	.07	1.0	3	tr	—
527	Plain, home recipe, medium size	1	40	38	118	492	3	17	4	1	tr	21	42	.8	176	50	12	.07	.09	1.3	3	tr	—
528	Buckwheat, made from mix with milk and eggs (10.2 cm diam.)	1	27	58	54	226	2	6	2	tr	tr	18	59	.4	125	66	19	.04	.05	.5	3	tr	—
529	Plain, made from mix with milk and eggs (10.2 cm diam.)	1	27	51	61	254	2	9	2	tr	tr	20	58	.6	152	42	20	.07	.10	1.2	3	tr	—
530	Waffles, made from mix with milk and eggs	1 round	75	42	206	863	7	27	8	3	1	45	179	1.1	515	146	52	.11	.17	2.0	9	tr	—
531	Macaroni, enriched, cooked	250 mL	148	72	164	687	5	34	1	tr	tr	0	12	2.2	1	90	0	.21	.38	2.6	5	0	1.2
532	Noodles, chow mein, canned	250 mL	47	11	230	961	6	27	11	2	tr	5	15	.4	470	34	0	.05	.03	1.8	—	0	—
533	Noodles, egg, enriched, cooked	250 mL	169	70	211	884	7	39	2	tr	tr	52	17	2.5	3	74	35	.24	.43	3.3	7	0	—
534	Spaghetti, enriched, cooked	250 mL	148	73	164	687	5	34	1	tr	tr	0	12	2.2	1	90	0	.21	.38	2.6	6	0	1.2
Pies	Sector (1/6 of 23 cm diam. pie)	1 sector	158	48	404	1692	3	60	18	5	4	0	13	1.4	476	126	5	.13	.10	1.9	10	2	—
535	Apple, 2 crust	1 sector	158	51	382	1600	4	55	17	4	4	0	17	1.9	423	103	5	.13	.11	2.1	11	5	—
536	Blueberry, 2 crust	1 sector	158	47	412	1725	4	61	18	5	4	0	22	1.4	480	166	70	.14	.11	2.1	12	0	—
537	Cherry, 2 crust	1 sector	158	47	412	1725	4	61	18	5	4	0	22	1.4	480	166	70	.14	.11	2.1	12	0	—

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Food	Measure	g	Water %	Energy kcal	Energy kJ	Protein g	Carbohydrates g	Fat g	SFA g	PUFA g	Cholesterol mg	Calcium mg	Iron mg	Sodium mg	Potassium mg	Vitamin A RE	Thiamin mg	Riboflavin mg	Niacin NE	Folate mcg	Vitamin C mg	g	Dietary Fibre
538	Custard, 1 crust	1 sector	152	331	1386	9	36	17	6	2	160	146	1.4	436	208	105	.09	.24	2.4	11	0		
539	Lemon meringue, 1 crust	1 sector	140	47	357	1494	5	53	14	4	2	130	20	1.3	395	70	.71	.07	.11	1.7	8	4	
540	Minced meat, 2 crust	1 sector	158	43	428	1792	4	65	18	5	4	2	44	2.4	708	281	tr	.11	.11	1.9	7	2	
541	Peach, 2 crust	1 sector	158	48	403	1686	4	60	17	4	4	0	16	1.7	423	235	.115	.13	.13	2.7	9	5	
542	Pumpkin, 1 crust	1 sector	152	59	321	1342	6	37	17	6	2	93	78	1.2	325	243	.375	.11	.17	2.1	13	0	
543	Raisin, 2 crust	1 sector	158	43	427	1785	4	68	17	4	4	0	28	2.2	450	303	tr	.13	.11	2.2	7	2	
544	Pie crust, baked shell (23 cm diam.)	1	180	15	900	3766	11	79	60	15	13	0	25	4.0	1100	90	0	.40	.31	6.1	21	0	
545	Pies, fried, fast food apple	1 pie	85	43	255	1067	2	31	14	6	tr	14	12	8	326	42	3	.07	.04	1.0		1	
546	Pies, fried, fast food cherry	1 pie	85	42	250	1046	2	32	14	6	tr	13	11	6	371	61	19	.04	.04	.9		1	
547	Cone for ice cream	1 cone	4	9	15	63	tr	3	tr	tr	0	0	6	tr	9	10	0	tr	tr			0	
548	Popcorn, air popped, plain	250 mL	8	4	31	129	1	6	tr	tr	tr	0	tr	2	tr	20	0	.03	.01	.4		0	
549	Popcorn, popped with oil and salt	250 mL	12	3	55	229	1	7	3	2	tr	0	tr	.3	233	31	0	.04	.01	.4		0	
550	Popcorn, sugar coated	250 mL	37	4	142	593	2	32	1	tr	tr	0	2	.5	tr	95	0	.14	.02	.8		0	
551	Potato chips	10 chips	20	3	105	438	1	10	7	2	4	0	5	2	94	260	0	.03	tr	1.1	9	8	
552	Pretzels, bread stick	5 pretzels	15	5	59	245	1	11	tr	tr	tr	0	3	2	252	20	0	tr	tr	.4		0	
553	Pretzels, 3 ring	1	3	5	12	49	tr	2	tr	tr	tr	0	tr	tr	50	4	0	tr	tr			0	
554	Danish pastry, plain, round (11 cm × 2.5 cm)	1	65	22	274	1148	5	30	15	5	3	42	33	1.1	238	73	60	.14	.15	2.2	23	0	
555	Date squares	1	90		226	945	2	45	5			24	1.3	135	270	3	.07	.05	tr	14			
556	Doughnuts, cake type	1	43	24	168	703	2	22	8	2	2	26	17	8	215	39	10	.07	.07	.9	4	0	
557	Doughnuts, yeast-leavened	1	42	28	174	728	3	16	11	3	2	11	16	8	98	34	8	.07	.07	1.1	9	0	
558	Eclairs, chocolate, custard filled	1	100	56	239	1000	6	23	14	4	2	136	80	.7	82	122	102	.04	.16	1.2	9	0	

Combination Dishes

559	Beans and wieners, canned	250 mL	272	69	386	1615	18	42	18	6	2	16	130	4.7	1170	638	41	.16	.15	5.9	81	0	6.3
560	Beans with tomato sauce and pork, canned	250 mL	267	73	262	1096	14	52	3	1	tr	19	150	8.8	1180	802	32	.14	.12	4.0	60	8	5.9
561	Beef and vegetable stew, canned	250 mL	259	83	205	856	15	18	8	5	tr	36	31	2.3	1064	451	754	.08	.13	5.3	35	8	
562	Beef pot pie, baked	1/3 pie	210	55	517	2161	21	39	30	8	6	44	29	3.8	596	334	517	.29	.29	8.7	17	6	
563	Cheeseburger, regular, 2 oz patty	1	112	46	300	1255	15	28	15	7	1	44	135	2.3	672	219	65	.26	.24	6.5		1	
564	Cheeseburger, 4 oz patty	1	194	46	525	2197	30	40	31	15	2	104	236	4.5	1224	407	128	.33	.48	12.9		3	
565	Chicken à la King, home recipe	250 mL	259	68	495	2070	29	13	36	13	4	197	135	2.6	803	427	357	.10	.44	11.0	23	13	
566	Chicken and noodles, home recipe	250 mL	254	71	389	1626	24	27	20	6	4	102	28	2.3	635	157	137	.05	.18	8.9	13	0	
567	Chicken pot pie, baked	1/3 pie	232	57	545	2281	23	42	31	11	5	72	70	3.0	594	343	926	.33	.33	9.0	21	5	

Food	Measure	Weight	Water	Energy	Energy	Protein	Carbohydrates	Fat	SFA	PUFA	Cholesterol	Calcium	Iron	Sodium	Potassium	Vitamin A	Thiamin	Riboflavin	Niacin	Folate	Vitamin C	g	Dietary Fibre
568	Chili con carne without beans, canned	250 mL	269	67	538	2251	28	16	40	19	0	70	102	3.8	1428	627	40	.05	.32	11.0	22	0	-
569	Chili con carne with beans, canned	250 mL	269	76	302	1264	15	32	15	6	1	46	127	9.2	1410	983	92	.13	.28	4.1	61	5	8.9
570	Chop suey with meat or chicken	250 mL	264	75	317	1325	27	13	18	9	tr	106	63	5.0	1111	449	63	.29	.40	10.3	30	34	-
571	Chow mein, chicken, canned, without noodles	250 mL	264	89	100	420	7	19	tr	0	0	8	48	1.3	766	441	16	.05	.11	2.3	21	13	-
572	Chow mein, chicken, home recipe, without noodles	250 mL	264	78	269	1127	33	11	11	3	3	82	61	2.6	758	499	29	.08	.24	10.5	21	11	-
573	English muffin, egg, cheese and bacon	1	138	49	360	1506	18	31	18	8	tr	213	197	3.1	832	201	160	.46	.50	7.0	-	1	-
574	Fish cakes, fried (6.5 cm × 2 cm)	1	60	66	103	432	9	6	5	2	1	25	7	2	106	209	0	.02	.04	2.6	7	0	-
575	Fish sandwich, large, without cheese, fast food	1	170	48	470	1966	18	41	27	6	10	91	61	2.2	621	375	15	.35	.23	6.8	-	1	-
576	Fish sandwich, regular with cheese, fast food	1	140	43	420	1757	16	39	23	6	8	56	132	1.8	667	274	25	.32	.26	6.2	-	2	-
577	Hamburger, regular, 2 oz patty	1	98	46	245	1025	12	28	11	4	tr	32	56	2.2	463	202	14	.23	.24	6.0	-	1	-
578	Hamburger, 4 oz patty	1	174	50	445	1862	25	38	21	7	tr	71	75	4.8	763	404	28	.38	.38	12.4	-	1	-
579	Luncheon meat, canned (8 cm × 5 cm × 1 cm)	1 slice	45	52	150	629	6	tr	14	5	2	28	3	.3	580	97	0	.17	.09	2.3	3	tr	-
580	Macaroni and cheese, canned	250 mL	254	80	241	1010	10	27	10	4	2	25	211	1.0	772	147	84	.13	.25	2.8	21	tr	-
581	Macaroni and cheese, home recipe	250 mL	211	58	454	1898	18	42	23	13	1	72	382	1.9	1146	253	272	.21	.42	5.1	18	tr	-
582	Meat loaf, homemade (10 cm × 8 cm × 1 cm)	1 slice	73	64	117	489	12	3	6	-	-	67	28	1.7	477	273	-	.05	.14	8.1	-	1	-
583	Pizza, cheese (1/6 of 35 cm diam.)	1 sector	65	48	153	642	8	18	5	2	tr	12	144	1.4	456	85	123	.14	.20	2.9	10	5	-
584	Pizza, sausage (1/6 of 35 cm diam.)	1 sector	65	43	183	767	8	18	9	2	tr	19	122	.9	434	127	109	.05	.12	2.4	10	6	-
585	Quiche Lorraine (1/6 of 20 cm diam.)	1 sector	176	47	600	2510	13	29	48	23	4	285	211	1.0	653	283	454	.11	.32	2.5	-	0	-
586	Roast beef sandwich, fast food	1	150	52	345	1443	22	34	13	4	2	55	60	4.0	757	338	32	.40	.33	10.0	-	2	-
587	Spaghetti, with meat balls/tomato sauce, homemade	250 mL	262	70	351	1469	20	41	12	4	tr	79	131	3.9	1066	702	503	.26	.31	7.8	21	24	-
588	with tomato sauce and cheese, canned	250 mL	264	80	201	839	6	41	2	tr	tr	8	42	2.9	1008	319	293	.37	.29	5.8	14	11	-
589	Taco, fast food	1 taco	81	55	195	816	9	15	11	4	tr	21	109	1.2	456	263	57	.09	.07	3.1	-	1	-
590	Tourtière (pork pie) (1/6 of 23 cm diam.)	1 sector	139	37	482	2018	21	32	30	8	5	53	27	3.9	707	235	3	.56	.32	8.2	15	tr	-

Fats and Oils

Butter	591	Cup	250 mL	240	16	1720	7198	2	tr	195	121	7	525	56	4	1984	62	1810	.01	.08	.6	7	0	-
	592	Tablespoon	15 mL	14	16	100	420	tr	tr	11	7	tr	31	3	tr	116	4	106	tr	tr	tr	tr	0	-
	593	Pat	5 mL	5	16	36	150	tr	tr	4	3	tr	11	1	tr	41	1	38	.00	tr	tr	tr	0	-

Food	Measure	Weight	Water	Energy	Energy	Protein	Carbohydrates	Fat	SFA	PUFA	Cholesterol	Calcium	Iron	Sodium	Potassium	RE	Thiamin	Riboflavin	Niacin	Folate	Vitamin C	
		g	%	kcal	kJ	g	g	g	g	g	mg	mg	mg	mg	mg		mg	mg	NE	mcg	mg	g

Dietary Fibre

Cooking Fats	594	Lard	250 mL	217	0	1957	8190	0	0	217	89	24	206	tr	.0	tr	tr	0	.00	.00	0	0	0	
	595	Lard	15 mL	13	0	117	491	0	0	13	5	1	12	tr	.0	tr	tr	0	.00	.00	0	0	0	
	596	Shortening, vegetable oils	250 mL	217	0	1953	8171	0	0	217	67	-	0	0	0	0	tr	tr	0	.00	.00	-	0	
	597	Shortening, vegetable oils	15 mL	13	0	117	490	0	0	13	4	-	0	0	0	0	0	0	.00	.00	-	0	-	
Margarine	Tub: Vegetable oils, no declaration of fatty acids																							
	598		250 mL	240	16	1719	7194	2	1	193	31	36	0	64	.0	2589	90	2541	.02	.08	.5	3	tr	
	599	no declaration of fatty acids	15 mL	14	16	100	420	tr	tr	11	2	2	0	4	.0	151	5	148	tr	tr	tr	tr	-	
	600	with declaration of fatty acids	250 mL	240	16	1719	7194	2	1	193	35	81	0	64	.0	2589	90	2541	.02	.08	.5	3	tr	
Oils	601	with declaration of fatty acids	15 mL	14	16	100	420	tr	tr	11	2	5	0	4	.0	151	5	148	tr	tr	tr	tr	-	
	602	Canola (rapeseed, colza)	250 mL	230	0	2033	8507	0	0	230	17	77	0	0	.0	0	0	0	.00	.00	0	0	0	
	603	Canola (rapeseed, colza)	15 mL	14	0	124	518	0	0	14	1	5	0	0	.0	0	0	0	.00	.00	0	0	0	
	604	Corn	250 mL	230	0	2033	8507	0	0	230	29	135	0	0	.0	0	0	0	.00	.00	0	0	0	
Salad Dressings	605	Corn	15 mL	14	0	124	518	0	0	14	2	8	0	0	.0	0	0	0	.00	.00	0	0	0	
	606	Olive	250 mL	230	0	2033	8507	0	0	230	31	19	0	tr	.9	tr	0	0	.00	.00	0	0	0	
	607	Olive	15 mL	14	0	124	518	0	0	14	2	1	0	tr	tr	tr	0	0	.00	.00	0	0	0	
	608	Peanut	250 mL	228	0	2016	8433	0	0	228	39	73	0	tr	tr	tr	tr	0	.00	.00	0	0	0	
Salad Dressings	609	Peanut	15 mL	14	0	124	518	0	0	14	2	4	0	tr	tr	tr	tr	0	.00	.00	0	0	0	
	610	Soybean	250 mL	230	0	2033	8507	0	0	230	33	133	0	tr	tr	0	0	0	.00	.00	0	0	0	
	611	Soybean	15 mL	14	0	124	518	0	0	14	2	8	0	tr	tr	0	0	0	.00	.00	0	0	0	
	612	Sunflower	250 mL	230	0	2033	8507	0	0	230	24	151	0	0	.0	0	0	0	.00	.00	0	0	0	
Salad Dressings	613	Sunflower	15 mL	14	0	124	518	0	0	14	1	9	0	0	.0	0	0	0	.00	.00	0	0	0	
	614	Mayonnaise, more than 65% oil	15 mL	14	16	102	429	tr	tr	11	1	4	8	1	tr	73	2	4	tr	tr	tr	tr	-	
	615	Mayonnaise type, more than 35% oil	15 mL	15	40	58	245	tr	4	5	2	2	4	2	tr	107	1	13	tr	tr	tr	0	-	
	616	Thousand Island, commercial	15 mL	16	46	64	267	tr	3	6	tr	2	4	2	tr	112	17	15	tr	tr	tr	1	0	
Salad Dressings	617	Blue cheese	15 mL	16	32	77	321	tr	2	8	tr	3	3	13	tr	188	4	11	tr	.02	.2	1	tr	-
	French:																							
	618	Calorie reduced, commercial	15 mL	16	69	24	100	tr	2	2	tr	tr	tr	2	tr	310	6	0	.00	.00	tr	0	0	
	619	Regular, commercial	15 mL	16	38	64	269	tr	2	6	tr	2	9	2	tr	255	tr	3	tr	tr	tr	0	-	
Salad Dressings	620	Home cooked, boiled	15 mL	16	69	25	105	tr	2	2	tr	tr	9	13	tr	117	19	20	.01	.02	.5	0	tr	
	Sugars and Sweets																							
	621	Caramels, plain or chocolate	3	30	8	120	501	1	23	3	2	tr	tr	44	.4	68	58	tr	tr	.05	.3	-	0	

Food	Measure	Weight g	Water %	Energy kcal	Energy kJ	Protein g	Carbohydrates g	Fat g	SFA g	PUFA g	Cholesterol mg	Calcium mg	Iron mg	Sodium mg	Potassium mg	Vitamin A RE	Thiamin mg	Riboflavin mg	Niacin NE	Folate mcg	Vitamin C mg	Dietary Fibre g

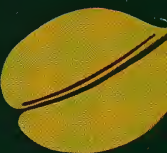
White																						
652	Granulated	250 mL	211	tr	812	3399	0	210	0	0	0	0	2	2	6	0	.00	.00	.0	-	0	-
653	Granulated	15 mL	13	tr	50	209	0	13	0	0	0	0	tr	tr	tr	0	.00	.00	.0	-	0	-
654	Powdered	250 mL	127	tr	489	2046	0	126	0	-	0	0	.1	1	4	0	.00	.00	.0	-	0	-
655	Maple	15 mL	20	33	50	211	0	13	0	0	0	21	2	2	35	0	.03	.01	.0	-	0	-
656	Table (blends)	15 mL	21	24	61	255	0	16	0	0	0	10	9	14	tr	0	.00	.00	.0	-	0	-

Miscellaneous Items

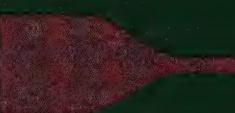
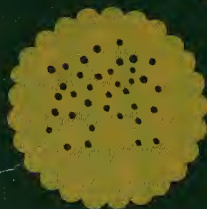
Beverages, Alcoholic																						
657	Beer	341 mL	343	92	151	632	1	13	0	0	0	17	tr	17	86	0	tr	.10	1.7	21	0	-
658	Liquor, gin, rum, vodka, whiskey	50 mL	47	67	109	456	0	0	0	0	0	0	.0	1	0	0	.00	.00	.0	0	0	-
Wine:																						
659	Dessert	100 mL	101	73	155	649	tr	12	0	0	0	8	tr	9	93	0	.02	.02	.2	tr	0	-
660	Red table	100 mL	100	89	72	301	tr	2	0	0	0	8	.4	5	112	0	tr	.03	.1	2	0	-
661	White table	100 mL	100	90	68	285	tr	1	0	0	0	9	tr	5	80	0	tr	tr	.1	tr	0	-
662	Coffee	250 mL	250	100	5	25	tr	1	0	0	0	5	.2	5	135	0	.00	.00	.6	tr	0	-
663	Postum, made with water	250 mL	254	99	13	54	tr	3	0	0	0	8	.1	10	61	0	tr	tr	.6	1	0	-
664	Soft drinks, club soda (soda water)	280 mL	289	100	0	0	0	0	0	0	0	14	tr	61	6	0	.00	.00	.0	0	0	-
665	Soft drinks, cola type beverage	280 mL	292	89	120	502	0	30	0	0	0	9	tr	12	3	0	.00	.00	.0	0	0	-
666	Soft drinks, cola type beverage with aspartame	280 mL	280	100	3	12	tr	tr	0	0	0	11	.1	17	0	0	.01	.06	.0	0	0	-
667	Soft drinks, ginger ale	280 mL	289	91	98	410	0	25	0	0	0	9	.5	20	3	0	.00	.00	.0	0	0	-
668	Soft drinks, tonic water	280 mL	289	91	98	413	0	25	0	0	0	3	tr	12	0	0	.00	.00	.0	0	0	-
669	Tea, beverage	250 mL	250	100	3	13	0	1	0	0	0	0	tr	8	93	0	.00	.04	.0	13	0	-
670	Tea, beverage, made from sweetened instant powder	250 mL	273	91	93	389	tr	23	0	0	0	5	.1	8	52	0	.00	.05	.2	10	0	-
Condiments																						
671	Bouillon cubes	1 cube	6	3	10	43	1	tr	tr	tr	tr	4	.1	1440	24	tr	.01	.01	.4	2	0	-
672	Ketchup	15 mL	17	69	18	75	tr	4	tr	0	0	4	.1	177	62	24	.02	.01	.3	3	3	-
673	Mustard, prepared, yellow	15 mL	16	80	12	50	tr	1	tr	tr	0	13	.3	200	21	0	.00	.00	.0	-	0	-
674	Salt, table	5 mL	6	tr	0	0	0	0	0	0	0	15	tr	2325	tr	0	.00	.00	.0	0	0	-
675	Shake and bake, dry	15 mL	6	5	24	102	tr	4	tr	tr	0	4	2	210	12	0	.01	.00	.2	2	0	-
676	Vinegar, white	15 mL	15	95	2	8	0	tr	0	0	0	0	.0	tr	2	0	.00	.00	.0	0	0	-

Food	Measure	Weight g	Water %	Energy kcal	Energy kJ	Protein g	Carbohydrates g	Fat g	SFA g	PUFA g	Cholesterol mg	Calcium mg	Iron mg	Sodium mg	Potassium mg	Vitamin A RE	Thiamin mg	Riboflavin mg	Niacin mg	Folate mcg	Vitamin C mg			
Gelatin	677 Dessert powder	1 package	85	2	315	1319	8	75	0	0	0	0	0	270	179	0	00	00	0	0	0	0		
	678 Dessert, dietetic, prepared with water	125 mL	127	99	10	43	3	tr	tr	0	tr	0	0	9	47	0	00	00	0	0	0	0		
	679 Dessert, prepared with water	125 mL	127	84	75	314	2	18	0	0	0	0	0	65	2	0	00	00	0	0	0	0		
	680 Dry powder	1 envelope	7	13	23	98	6	0	tr	0	0	0	tr	0	6	2	0	00	00	tr	0	0		
	681 Barbecue sauce	250 mL	264	81	198	828	5	34	5	tr	2	0	50	2.4	2152	459	230	08	05	3.2	11	18		
Sauces and Gravy	682 Gravy, brown, canned	15 mL	15	87	8	33	tr	tr	tr	tr	tr	tr	1	8	12	0	tr	tr	tr	tr	0	0		
	683 White sauce, medium	250 mL	264	73	428	1789	10	23	33	18	1	108	304	5	1001	367	364	13	45	2.7	12	2		
Soups	Canned, condensed:																							
	684 Bean with bacon, with water added	250 mL	267	84	182	760	8	24	6	2	2	3	85	2.2	1004	425	93	09	04	2.1	34	2	-	
	685 Beef broth, bouillon/consomme, with water added	250 mL	255	96	31	128	6	2	0	0	0	0	10	6	673	163	0	02	03	8	3	1		
	686 Beef noodle, with water added	250 mL	258	92	88	367	5	9	3	1	tr	5	15	1.2	1006	106	67	07	06	1.9	5	tr	-	
	687 Clam chowder, Manhattan with tomato, with water added	250 mL	258	90	83	345	4	13	2	tr	1	3	36	2.0	1912	276	98	07	05	1.0	10	3	-	
	688 Clam chowder, without tomato, with whole milk added	250 mL	262	85	173	723	10	18	7	3	1	24	197	1.6	1048	317	42	07	25	3.1	10	4	-	
	689 Cream of mushroom, with water added	250 mL	258	90	137	572	2	10	9	3	4	3	49	5	1091	106	0	05	10	1.4	5	1	-	
	690 Cream of mushroom, with whole milk added	250 mL	262	85	215	899	6	16	14	5	5	21	189	6	1137	286	39	08	30	2.4	10	2	-	
	691 Cream of chicken, with water added	250 mL	258	91	124	518	4	10	8	2	2	10	36	6	1042	93	59	03	07	1.6	2	tr	-	
	692 Cream of chicken, with whole milk added	250 mL	262	85	202	844	8	16	12	5	2	29	191	7	1106	288	100	08	27	2.7	8	1	-	
	693 Minestrone, with water added	250 mL	255	91	87	363	5	12	3	tr	1	3	36	1.0	964	332	247	06	05	1.5	17	1	-	
	694 Split pea with ham, with water added	250 mL	267	82	200	838	11	30	5	2	tr	8	24	2.4	1063	422	48	16	08	3.3	3	2	-	
	695 Tomato, with water added	250 mL	258	90	90	378	2	18	2	tr	1	0	13	1.9	921	279	72	09	05	1.8	15	70	-	
	696 Tomato, with whole milk added	250 mL	262	85	170	713	6	24	6	3	1	18	168	1.9	985	474	115	14	26	3.0	22	72	-	
	697 Vegetable beef, with water added	250 mL	258	92	83	345	6	11	2	tr	tr	5	18	1.2	1011	183	201	04	05	2.0	11	3	-	
	698 Vegetable, vegetarian, with water added	250 mL	255	92	77	320	2	13	2	tr	tr	0	23	1.1	870	222	319	06	05	1.2	11	2	-	
Soups	Dehydrated, dry form, prepared with water:																							
	699 Chicken noodle	250 mL	267	94	56	235	3	8	1	tr	tr	3	35	5	1359	32	5	08	06	5	2	tr	-	
	700 Onion	250 mL	260	96	29	120	1	5	tr	tr	tr	0	13	2	897	68	0	03	06	5	2	tr	-	
	701 Tomato vegetable	250 mL	267	94	59	246	2	11	tr	tr	tr	0	8	7	1210	109	21	06	05	5	11	6	-	
	702 Baking powder, continuous action	15 mL	13	1	18	75	0	4	0	0	0	0	379	6	855	28	0	00	00	0	0	0	-	
Leavening Agents	703 Yeast, baker's, dry, granulated	1 envelope	8	5	23	94	3	3	tr	0	0	4	1.3	4	160	0	19	43	3.5	254	0	0	-	
	704 Yeast, brewers, dry	15 mL	8	5	23	95	3	3	tr	0	0	0	17	1.4	10	152	0	125	34	3.6	254	0	-	

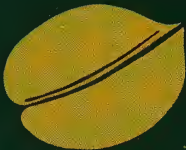




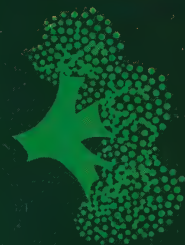
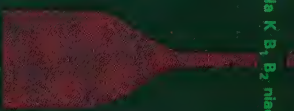
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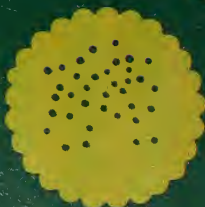
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NUTRITION:

THE

INS & OUTS



Alberta

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Home Economics Branch

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I N T R O D U C T I O N

Choosing nutritious foods and developing healthy eating habits are skills worth learning. You can't be fit and look attractive if you don't eat properly.

Good nutrition isn't expensive. It doesn't take any extra time. You do need some basic facts about how to choose nutritious foods and how much of them to eat.

You'll find the above information in this booklet - as well as a handy check-sheet you can remove and fasten to the refrigerator as a reminder to choose nutrition!

Home Economics Branch
Alberta Agriculture, Food
and Rural Development
March 1993
Homedex 1112-10-1

	MILK	MEAT	GRAIN PRODUCTS	VEGETABLES & FRUIT	"OTHER FOODS"																														
MONDAY																																			
TUESDAY																																			
WEDNESDAY																																			
THURSDAY																																			
FRIDAY																																			
SATURDAY																																			
SUNDAY																																			
<table border="1"> <thead> <tr> <th>NUTRITION: The Ins & Outs</th> <th>MILK</th> <th>MEAT</th> <th>GRAINS</th> <th>VEGETABLES & FRUIT</th> <th>"OTHER FOODS"</th> </tr> </thead> <tbody> <tr> <td>Children</td> <td>2 or more svgs./day</td> <td>2 svgs./day</td> <td>5 svgs./day</td> <td>5 or more svgs./day</td> <td>if you</td> </tr> <tr> <td>Active teens</td> <td>4 svgs./day</td> <td>3 svgs./day</td> <td>12 svgs./day</td> <td>10 svgs./day</td> <td>need</td> </tr> <tr> <td>Sedentary Adults</td> <td>2 svgs./day</td> <td>2 svgs./day</td> <td>6 svgs./day</td> <td>7 svgs./day</td> <td>calories</td> </tr> <tr> <td>Pregnant or Nursing</td> <td>4 svgs./day</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>						NUTRITION: The Ins & Outs	MILK	MEAT	GRAINS	VEGETABLES & FRUIT	"OTHER FOODS"	Children	2 or more svgs./day	2 svgs./day	5 svgs./day	5 or more svgs./day	if you	Active teens	4 svgs./day	3 svgs./day	12 svgs./day	10 svgs./day	need	Sedentary Adults	2 svgs./day	2 svgs./day	6 svgs./day	7 svgs./day	calories	Pregnant or Nursing	4 svgs./day				
NUTRITION: The Ins & Outs	MILK	MEAT	GRAINS	VEGETABLES & FRUIT	"OTHER FOODS"																														
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A basic knowledge of nutrition begins with the four food groups of Canada's Food Guide to Healthy Eating:

Milk Products Grain Products

Vegetables & Fruit Meat & Alternatives

What Foods are Nutritious?

A food is placed into a food group according to the nutrients it provides and sometimes, according to how we use a food. Some foods aren't part of the food group you'd expect because they don't provide the key nutrients. For example, butter is a dairy product, but it doesn't fit into the milk products food group because it doesn't contain the key nutrients, calcium and protein.

The human body requires many nutrients each day to function properly. If your daily food intake contains sufficient amounts of the 11 key nutrients listed below, you can be certain all your many nutrient needs are being met.

If a food provides significant amounts of the key nutrients for one of the food groups as listed above, generally it will belong in that group. If the food, regardless of its source, doesn't provide the key nutrients, it doesn't belong in the food group. It might belong in a different group or it might belong to the fifth group we call "Other Foods".

An "Other Food" is one which generally contains many calories in proportion to nutrients (often as fat and/or sugars) or it may be a food which has no nutrients or food energy, such as tea and coffee.

See the illustration on page two.

Food Group	Key Nutrients
Milk Products	Protein Calcium Riboflavin
Grain Products	Carbohydrates B-Vitamins (thiamine, riboflavin, niacin) Iron
Meat & Alternatives	Iron Protein B-Vitamins
Vegetables & Fruits	Vitamin A Vitamin C Folic Acid

THE FOUR FOOD GROUPS

Meat & Alternatives

Side Bacon,
Gelatin

Ready-to-Eat
Cold Meats

Canned or Frozen Main Dishes
(these may not contain
a full serving from
the meat group)

Meat,
Fish, Poultry

Peas, Beans,
Lentils

Eggs
Nuts

Whole Grain Cereals
enriched Whole Grain
Flour or Flour
Products (Pasta)
converted, special
process, or
Brown Rice

Refined,
Ready to Eat
Breakfast
Cereals

Pre-
sweetened
Breakfast
Cereals,
Granola Bars
Cookies
Cakes
Doughnuts
Unenriched White Flour
Polished Rice

Granola

Milk Products

Rich Ice Creams
(e.g. 16% fat)

Whipped Cream

Sour Cream

Chocolate
Milk

Ice Milk

Cottage Cheese

Sweetened
Yogurt

Milk
Soup

Milk
Pudding

Milk

Plain Yogurt

Cheese

Evaporated Milk

Raw,
cooked,
canned
or frozen
Fruit &
Vegetables

Dried Fruits

Sweetened
Fruits

Sweetened
Juices

French Fries

Jams

Jellies

Fruit Pies
or Pudding

Fruit "Drinks"

Potato Chips

Grain Products

Some Additional "Others"

Soft Drinks, Candy, Fats & Oils (including Butter),
Coffee & Tea, Coffee Whitener & Alcohol

Vegetables & Fruit

Nutrient Density

A food is considered to be "nutrient dense" if it provides a large proportion of nutrients compared to calories. It is not likely to be nutrient dense if it is high in calories compared to nutrients - or perhaps it has almost no nutrients or calories at all (e.g. tea & coffee).

The foods closest to the centre, in the darker section of the circle, are better choices than those foods closer to the edge in the lighter section, but all foods within the circle are nutritious. All foods outside the circle are "Other Foods" because they contain more calories than nutrients.

Canada's Guidelines to Healthy Eating

Nutrition is a dynamic science with new research giving us more and more information about the kind of food we should be eating for optimal health. In 1990, Health and Welfare Canada updated its guidelines for healthy eating.

Here they are:

- 1. Enjoy a VARIETY of foods.** By following Canada's Food Guide to Healthy Eating and selecting a variety of foods from each group, you will be assured of meeting your nutrient requirements.
- 2. Emphasize cereals, breads, other grain products, vegetables and fruit.** These foods are good sources of complex carbohydrates, they are usually low in fat and they contribute many minerals and vitamins.
- 3. Choose lower-fat dairy products, leaner meats and foods prepared with little or no fat.** Most Canadians consume more fat than is desirable. Reducing fat intake is thought to help reduce the risk of several diseases, such as cardiovascular disease and some cancers.
- 4. Achieve and maintain a healthy body weight by enjoying regular physical activity and healthy eating.** Health risks associated with overweight are well documented. Risk increases for such conditions as cardiovascular disease and diabetes. For adults, energy intake should be at least 1800 calories and physical activity should be part of controlling weight.
- 5. Limit salt, alcohol and caffeine.** Excesses are thought to increase the risk for several conditions such as cardiovascular disease and diabetes. It's worth knowing that some soft drinks and over-the-counter medications contain caffeine, so check the label to see if it's listed. Up to the equivalent of four cups of coffee per day should pose no problem. If you drink alcohol at all, limit it to no more than two drinks per day.

What is Canada's Food Guide to Healthy Eating?

Identifying nutritious foods and knowing which food group they belong to is only part of being well-informed. You also need to know how much food to eat to provide the nutrients needed for good health! Choosing foods according to Canada's Food Guide will provide all the nutrients needed each day.

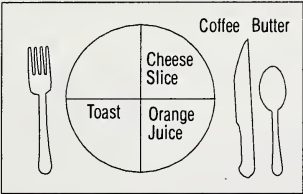
CANADA'S FOOD GUIDE TO HEALTHY EATING

	<i>Size of Serving</i>		<i>Recommended Number of Svgs. / Day</i>
<i>Milk Products</i>	250 mL (1 cup) 175 mL (3/4 cup) (3" x 1" x 1") 50 g	Milk Yogurt Cheddar Cheese	children ages 4-9 yrs 2-3 adolescents 10-16 yrs 3-4 adults 2-4 pregnant or nursing 3-4
<i>Meat & Alternatives</i>	50 - 100 g 125 mL (1/2 cup)	lean meat, poultry or fish Legumes 1-2 Eggs	2
<i>Grain Products</i>	175 mL 30 g 125 mL (1/2 cup) 1 slice	Hot Cereal Cold Cereal Rice or Pasta Bread	5 - 12
<i>Vegetables & Fruit</i>	125 mL (1/2 cup) 250 mL (1 cup)	Vegetable, Fruit or Juice, 1 medium Peach, Apple, Potato, Carrot, Banana Salad	5 - 10

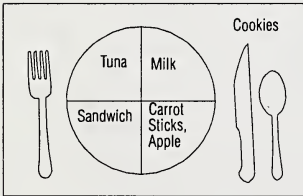
Canada's Food Guide to Healthy Eating can help you plan a balanced diet. A balanced diet is one which contains the recommended number of servings each day from the four food groups.

For example, imagine the day's meals being served on a "plate" divided into four sections, each one representing a food group. The "Other Foods" are outside the "plate".

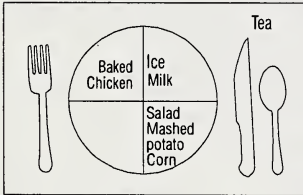
Breakfast



Lunch



Supper



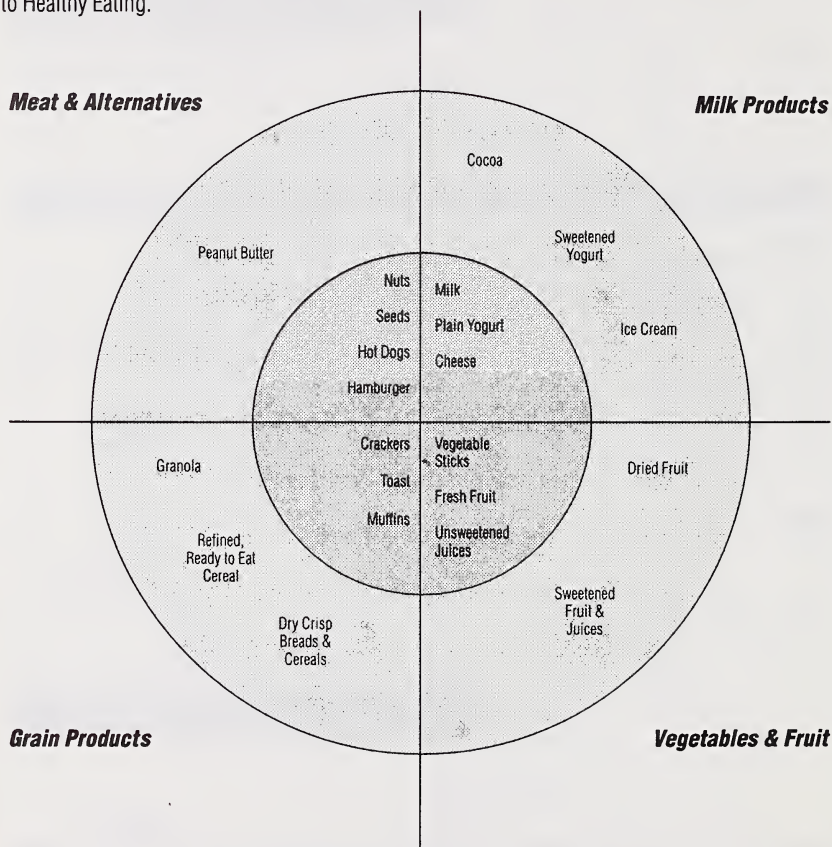
Milk Products	Meat & Alternatives	Grain Products	Vegetables & Fruits	Other
✓ Cheese		✓ Toast	✓ Orange Juice	✓✓ Coffee Butter
✓ Milk	✓ Tuna in Sandwich	✓✓ Bread in Sandwich	✓✓ Carrot Sticks, Apple	✓ Cookies
✓ Ice Milk	✓ Chicken		✓✓✓ Mashed Potato, Corn, Salad	✓ Tea
3	2	3	6	4

This sample menu doesn't provide sufficient servings from the Grain Products food group. These foods could be included as snacks by choosing muffins, whole grain crackers, a bowl of cereal or a whole wheat roll.

What About Snacks?

For most of us, snacking is part of our daily food intake. Growing children and active people usually need extra food energy between "regular" meals. Fortunately, each food group offers a wide variety of nutritious snack choices and can help round out the number of servings we need from Canada's Food Guide to Healthy Eating.

Some examples are shown below. The snack choices closer to the outer edge of the circle are higher in sugar. Be sure to brush your teeth after eating snacks that are likely to stick to your teeth.



Note: Dry bread and cereal products require a long chewing time. During this time, they pack into tooth crevices and promote tooth decay. Always eat something, such as cheese, sandwich fillings, meat spreads or milk with breads or cereals to help soften them and shorten chewing time.

Weight Control

Choosing foods as recommended in Canada's Food Guide to Healthy Eating allows for flexibility in calorie intake depending on the numbers of servings you choose from each group. Most of us can occasionally select "Other Foods", as long as we do so in moderation, without worrying about weight gain.

However, overweight is the number one concern for many people.

Being active plays a large part in controlling weight. To keep body weight constant, the energy consumed in food as kilocalories must balance the energy used in daily activity. Surplus energy not used up in body activity will be stored as fat. One pound of fat provides 3,500 calories. As few as 500 extra calories per day could result in a weight gain of almost half a kilogram (one pound) per week if not countered with increased activity!

Weight loss is a gradual thing and requires a change in eating habits for life. Promises of quick solutions to being overweight or fast, easy weight loss on "special" diets may be dangerous!

Many excellent books are available on this topic. There are also many "fad" books containing poor information. So check with your local home economist, nutritionist or dietitian for a recommendation.

Review

- Choose foods from the four food groups according to Canada's Food Guide to Healthy Eating to provide the nutrients your body needs. Note serving sizes and all the choices available in each food group.
- For a balanced meal, choose one food from each food group. One meal could be meatless since we need only two servings from meat and alternatives per day.
- More calories can be obtained by choosing additional servings, or foods from the "Other Foods".

How do you Know Whether a Food Belongs to a Food Group or is an "Other Food"?

The following information and examples will help:

1. Most raw or minimally processed foods are easily put into a food group. For example, milk - milk products; oatmeal - grain products; carrots - vegetables and fruit; beef - meat and alternatives.
2. Food ingredients are listed on the label in order of proportion. Notice especially the first four ingredients. If two of the first four ingredients are food-group foods rather than "Other Foods" the food is probably nutritious. For example, a bran muffin mix might read: enriched flour, whole wheat flour, bran, sugar. Since three of the first four ingredients are grain products, the muffin mix would fit into that group.
3. One serving should equal the serving size recommended in Canada's Food Guide to Healthy Eating for the food group.

Many foods are combination foods - that is, a serving contributes foods from more than one food group.

For example, a label on stew could read: "Beef, potato, water, carrots, peas." Beef is listed first, and if a serving of the stew contains 50 to 100g (two ounces) of beef, it may be classified into the meat group. Often, it is necessary to see and even measure the ingredient before you know whether it's a "serving".

The stew, for instance, might provide 125 mL (1/2 cup) of vegetables per serving in addition to the meat. In that case, it can be classified into vegetables and fruit, as well as meat.

On the other hand, some foods might not contribute a full serving from any group. For instance, a serving of canned chicken noodle soup might provide only a spoonful of chicken and only 60 mL (1/4 cup) of noodles.

4. Addition of sugars and/or fats to food products tends to move them towards the "Other Foods" because more food energy is added. For example, potatoes belong in the vegetables and fruits group - a serving contributes 20 mg of vitamin C or 50 per cent of the daily requirements. French fries have fat added, so they are four times as high in calories, but still provide almost one-third of the daily vitamin C per serving. French fries can still be classified in vegetables and fruits. Potato chips, however, contain even more fat and a serving provides only seven per cent of daily vitamin C requirement. Potato chips are an "Other Food" because they contain many calories compared to nutrients.

Nutrition Information

On some food labels you may see nutrition information. Including such information is voluntary, but if the manufacturer does choose to include it, he must follow specific guidelines. The core information must show calories, protein, carbohydrate and fat content. No claims may be made about vitamin or mineral content unless the food contains at least five per cent of the recommended daily intake. Then the label must show exactly how much is present. There are also regulations outlining what the manufacturer must state about such claims as "reduced salt", "reduced calorie", "high fibre" and similar statements. They must be backed up with such statements as "50% less salt than our regular crackers", "half the calories of our regular cream cheese" and so on.

Review

- Foods can be classified into four groups: milk products; grain products; vegetables and fruit; meat and alternatives; plus the "Other Foods".
- Each group except the "Other Foods" contributes specific "key" nutrients.
- Check the label of canned or packaged food. The list of ingredients can help you decide the food group.

Is Food More Than Just Nutrients?

Yes! Food provides more than just the 11 key nutrients listed on page one.

Water - many foods contain water, but most people will also drink between one and two litres of water or other fluid per day in order to maintain the body's water balance.

Fibre - all plants contain fibre, which are those parts of the plant not digested. Insoluble fibre is the cellulose portion (e.g. wheat bran) which absorbs water, thus adding bulk to the intestine and helping to keep stools soft and easy to eliminate. Soluble fibre (e.g. pectins) appear to help the body lower its blood levels of cholesterol. Whole grains, fruits and vegetables are good sources of fibre.

Fats - food from the milk group and the meat and alternatives group are good sources of fats. Vegetable oils contain the essential fatty acid linoleic. Fats are needed for various body functions, including transport of the fat-soluble vitamins A, D, E, and K.

Current nutrition recommendations suggest that we limit fat intake. For most of us, this means making a conscious effort to reduce our fat consumption. For example, choose lower fat dairy products; use meats with less visible fat and reduce fat added in cooking and at the table.

Trace Nutrients - most foods contain trace elements and there is no difficulty in meeting your body's needs. Trace elements are minerals required in very small quantities, such as chromium, iodine, magnesium, sodium and potassium. Vitamins E, B-12 and B-6 are also required in very small amounts. They are easily obtained by choosing a variety of foods according to Canada's Food Guide.

Other "Ins" About Nutrition

Vitamin Supplements - choosing foods according to Canada's Food Guide will provide the nutrients needed, so supplements are not needed. Furthermore, large quantities of many nutrients can be damaging to health.

Additives - in Canada, 400 additives have been tested and approved for use in food products.

There are 20 specific functions of food additives which fit into the following general areas:

- maintain nutritive quality
 - enhance keeping quality
 - make it attractive
 - aid in processing, packaging or storage
- In Canada, kinds and amounts of additives are closely controlled by the Health Protection Branch of Health and Welfare Canada. The manufacturer is required to provide proof of safety before any additive is permitted for use.

"Natural" or "Organic" Foods - many people like to use foods which are not processed, have no preservatives or are grown organically. Studies have shown there is no nutritional advantage to organic farming. If the soil is depleted fertilizing will increase crop yield, but it won't alter the nutritive value of the food. It makes no difference whether an organic or chemical fertilizer is used.

Additives are useful in preventing spoilage due to insects, rodents, mold, etc. It is worth noting that about one-fourth of the world's food supply is lost through spoilage. We need to protect the other three-quarters!

Antibiotics and growth hormones are used in meat production to protect the animals' health and to increase efficiency of feed use. Because the animals' bodies, as well as our own, naturally produce large quantities of the hormones in question, the miniscule tissue increases fall well within the range of normal production and pose no health hazards.

Self-made - many nutrients are manufactured within the body and extra sources are not needed. Vitamin K is made in the intestine. Vitamin D is made in the skin by the action of sunlight. For the average adult, exposure to sun probably is sufficient. Children need a source of vitamin D which can be supplied by drinking fortified milk.

Do Some Nutrients Destroy Each Other?

No. It is true that some elements in food will bond together, making it more difficult for the body to use them. For instance, in chocolate milk, some of the calcium is bound to the chocolate, but not enough to make a significant difference to calcium intake.

Some forms of iron are more easily absorbed by the intestine. Look on the food label for the terms "reduced" or "ferrous". These are the more easily absorbed forms.

Green leafy vegetables often contain significant amounts of calcium, but it tends to be bound to the leaf fibre and not available to the body.

Processing

Processing steps do not necessarily rob a food of nutrients. For instance, instant oatmeal is still a whole grain cereal. It has simply been cooked to soften the fibrous nature of the cereal; then dehydrated until you add the water back. Skim milk powder and processed cheese are still nutritious. Canned or frozen fruits and vegetables retain almost all of their value.

In the case of refined flour which has been enriched, the B-vitamins and some iron are added back, but fibre and trace elements are lost. The addition of extra sugars and/or fats may reduce the nutritional quality.

Vegetarian Diets

Some people enjoy vegetarian diets, either those which include plant foods only or diets which include milk and eggs.

Complete Proteins are those which contain all eight to 10 amino acids (building blocks for protein) required by humans. Such proteins are those from animal sources, such as meat, milk, eggs, cheese. **Incomplete Proteins** do not contain sufficient amounts of all the amino acids, although they may contain at least some of all the amino acids required by humans. Proteins from plant sources are incomplete, but by combining plant proteins at each meal to complement one another, the body can be supplied with all the essential amino acids. Some examples of these combinations are: wheat plus nuts; beans plus rice or cornmeal plus beans.

A vitamin B-12 supplement must be taken if no animal products are included in the vegetarian plan.

Review:

- Vitamin supplements are not needed if you follow Canada's Food Guide to Healthy Eating.
- Food additives must be tested and approved for safety. Without them, food loss through spoilage would be increased.
- Some nutrients can be manufactured within the body.
- Some nutrients are less available to the body depending upon the particular food sources.
- Most processed foods are still nutritious.
- Well planned vegetarian diets can be nutritious provided care is taken to combine complete and incomplete protein sources. A vitamin B-12 supplement is recommended if no animal protein source is included.

Sources And Function Of Nutrients In Foods

Nutrient	Functions In	Sources
Proteins	<ul style="list-style-type: none"> ▪ Building and repairing all types of body tissues ▪ Regulating body processes ▪ Forming antibodies to fight infection 	<p>Animal sources: milk, cheese, eggs, meat, fish, poultry.</p> <p>Plant sources: dried legumes (peas, beans, lentils) cereals, nuts, bread, vegetables.</p>
Carbohydrates	<ul style="list-style-type: none"> ▪ Supplying energy ▪ Sparing protein ▪ Assisting in utilization of fats 	<p>Starches: breads, cereals, pastas, potatoes, rice. Fruits and vegetables: fresh, canned, frozen, dried. Sugars, syrups, jams, honey, molasses.</p>
Fats	<ul style="list-style-type: none"> ▪ Supplying energy ▪ Transporting Vitamins A, D E and K ▪ Protecting and Insulating body parts ▪ Supplying the essential fatty acids 	<p>Meat and fish, oils, salad dressings, shortenings, margarine, nuts, butter, whole milk, cream, cheese.</p>
Vitamin A	<ul style="list-style-type: none"> ▪ Promoting normal growth and formation of skeleton and teeth ▪ Maintaining normal vision ▪ Resisting infection by keeping skin and lining layer of body healthy ▪ Ensuring normal reproduction and lactation. 	<p>Dark green and yellow vegetables, yellow fruits, egg yolks, liver, butter, cream, whole milk, cheeses, fortified skim, 1% or 2% milk, fortified margarine.</p>
Vitamin D	<ul style="list-style-type: none"> ▪ Utilizing calcium and phosphorus in the development and maintenance of sound bones and teeth 	<p>Vitamin D enriched milks (fluid, evaporated and powdered).</p> <p>Vitamin D enriched infant formula preparations.</p> <p>Vitamin D enriched margarines, vitamin supplements or fish liver oils.</p>

Sources And Function Of Nutrients In Foods

Nutrient	Functions In	Sources
<i>Vitamin E</i>	<ul style="list-style-type: none"> ▪ Protecting body's supplies of Vitamins A and C ▪ Maintaining health of membranes by being an antioxidant ▪ Participating in blood cell formation. 	Vegetable oils, e.g. corn and soybean, wheat germ, margarine and whole wheat bread
<i>Thiamine</i>	<ul style="list-style-type: none"> ▪ Releasing food energy from carbohydrates ▪ Promoting growth ▪ Maintaining food appetite ▪ Promoting normal function of the nervous system 	Pork and pork products (including organ meats) dried legumes (peas, beans, lentils) whole grain or enriched cereals, flours, bread, potatoes and pastas.
<i>Riboflavin</i>	<ul style="list-style-type: none"> ▪ Normal growth and development ▪ Maintaining good appetite and normal digestion ▪ Helping to maintain healthy skin and eyes ▪ Helping to maintain a normal nervous system ▪ Releasing energy to body cells during metabolism 	Milk and milk products (except butter), cheese, eggs, meats (particularly organ meats), salmon, leafy green vegetables, enriched cereals, flours, breads and pastas.
<i>Niacin</i>	<ul style="list-style-type: none"> ▪ Normal growth and development ▪ Maintaining normal functions of the gastro-intestinal tract ▪ Protecting normal function of the nervous system 	Meat (particularly organ meats) fish, poultry, enriched cereals, flours, breads and pastas, tomatoes, peas, potatoes, peanuts and peanut butter, milk, cheese and eggs.
<i>Vitamin K</i>	<ul style="list-style-type: none"> ▪ Normal clotting of blood 	Green and yellow vegetables. Synthesized by intestinal bacteria.

Sources And Function Of Nutrients In Foods

Nutrient	Functions In	Sources
Vitamin B6, (Pyridoxine)	<ul style="list-style-type: none"> ▪ Protein and energy metabolism 	Meat, liver, vegetables, whole grain cereals, eggs.
B12	<ul style="list-style-type: none"> ▪ Maintenance of healthy blood 	Liver, kidney, milk, meat
Folic Acid	<ul style="list-style-type: none"> ▪ Maintenance of healthy blood 	Liver, kidney, mushrooms, asparagus, broccoli, lima beans, spinach, lemons, bananas, strawberries, cantaloupe.
Pantothenic Acid	<ul style="list-style-type: none"> ▪ Energy metabolism 	Liver, kidney, egg yolk, nuts, legumes.
Vitamin C (Ascorbic Acid)	<ul style="list-style-type: none"> ▪ Maintaining healthy teeth and gums ▪ Maintaining strong blood vessel walls ▪ Helping to form and strengthen the cementing substance which holds body cells together 	Orange, lemon, grapefruit, lime, tangerine - and their juices, vitaminized apple juice, vitaminized fruit drinks, tomatoes and their juice, cantaloupe, strawberries, broccoli, cauliflower, brussel sprouts, cabbage (green), white potatoes, turnips.
Calcium	<ul style="list-style-type: none"> ▪ Forming strong bones and teeth and maintaining and repairing the skeleton ▪ Maintaining muscle tone, normal heart beat and healthy nerve function ▪ Aiding normal blood clotting 	Milk (any type), ice cream, cheese, (except cream cheese) yogurt, canned salmon and sardines (with bones). Some fruits and vegetables (e.g. broccoli, navy beans, string beans, turnips, carrots, dried apricots, cantaloupe) contain small amounts of calcium, but it is not readily available to the body from these sources.

Sources And Function Of Nutrients In Foods

Nutrient	Functions In	Sources
<i>Phosphorus</i>	<ul style="list-style-type: none"> Forming strong bones and teeth and maintaining and repairing the skeleton Facilitates absorption and transportation of nutrients Regulates the release of energy 	Meat, fish, poultry, eggs, nuts, milk, cheese
<i>Iron</i>	<ul style="list-style-type: none"> Building hemoglobin in red blood cells to transport oxygen and carbon dioxide Preventing nutritional anemia 	Liver, red meats, egg yolks, dried beans, peas and lentils, green leafy vegetables, whole grain and enriched cereals, pre-cooked infant cereals flours, bread and pastas.
<i>Iodine</i>	<ul style="list-style-type: none"> Proper functioning of the thyroid gland 	Iodized salt
<i>Sodium</i>	<ul style="list-style-type: none"> Involved in cellular metabolism 	Salt, pickled foods, processed cereals, milk, cheese, bread, salted butter, baking powder, cakes and cookies.
<i>Potassium</i>	<ul style="list-style-type: none"> Involved in cellular metabolism 	Meat, fish, potatoes, oranges, bananas, milk, legumes, most fruits and vegetables.
<i>Fluoride</i>	<ul style="list-style-type: none"> Prevention and control of dental caries Prevention of osteoporosis 	Drinking water (natural or fluoridated water supplies) sea fish, tea.
<i>Magnesium</i>	<ul style="list-style-type: none"> Formation of bone Metabolism of calcium and phosphorus 	Cocoa, nuts, whole grains, spinach, liver, clams, oysters, crabs.
<i>Zinc, copper, cobalt, manganese, chromium, molybdenum and selenium</i>	<ul style="list-style-type: none"> Known to be important, but functions in human nutrition are not fully understood 	The average Canadian diet would provide the required amount.

Source:
Selected Nutrition Teaching Aids for Public Health Nurses, Health and Welfare Canada.

